An Address
ON
THE AERIAL CONVECTION OF SMALL-POX FROM HOSPITALS.

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MR. PRESIDENT AND GENTLEMEN,—In opening the discussion on the possible influence of small-pox hospitals in aerially conveying the disease to surrounding populations, let me state *in limine* that my purpose is rather to review existing knowledge than to adduce new facts, unless, indeed, some facts to which I wish to draw attention are so very old as to be entirely new to any of the members of the Epidemiological Society. For it is a trite saying that history repeats itself, and even in regard to the discussion of this subject the saying holds true. A century ago the celebrated Dr. Haygarth of Chester and Dr. Waterhouse, Professor of Physic in the University of Cambridge in New England, had a lengthened controversy on this very question, and some of the points then raised are not without interest to us in the present day. Haygarth was the writer of "A Plan to Exterminate the Small-pox," the plan consisting of small-pox inoculation *plus* isolation; but the isolation he advocated was not necessarily by means of hospitals. He held that the disease could not spread aerially from one room to another in the same house, and that as to transmission through the open air, in moderate cases, a distance of a foot and a half might be looked upon as the limit, and that the infection of fevers was "confined to a much narrower sphere"—much narrower, that is to say, than a radius of eighteen inches. In support of his views he cited experiments (which, he said, "must strike every reader of sound sense with irresistible conviction") in which *moist* small-pox matter had failed to convey the infection at this distance, entirely forgetting that only dry matter might be expected to be carried atmospherically. At the same time Haygarth hotly opposed the thesis of a Dr. Paulet, who held that variola was not to be transmitted excepting by actual contact. In promulgating his own opinions he therefore carefully steered his plan between Scylla and Charybdis: if, on the one hand, he agreed with Paulet, isolation, as defined by Haygarth, was needless, and if, on the other hand, aerial transmission was possible beyond the limits of an apartment or a house, this system of isolation was useless. As to clothing, he asserted that "variolous miasms never adhere to clothes so as to communicate infection," and he challenged any man to prove the contrary. Here, however, it is important to notice that by "miasms" he did not include serum, pus, or scabs adhering to clothing. He argued that the poison of small-pox when conveyed at all by the atmosphere is not particulate, but is dissolved equally all through it; and so he sent to various correspondents a series of questions, of which one referred to transmission by clothing, and another was as follows:—"Did you ever know the small-pox conveyed out of one chamber into another by a person who certainly did not carry any variolous serum, pus, or scab on their clothes, hands, or feet, &c.?" Among the correspondents to whom these queries were sent was Professor Waterhouse. Now, Waterhouse also had a plan of dealing with small-pox, but it differed widely from Haygarth's. Waterhouse was by no means satisfied with isolation in a room or a dwelling; on the contrary, he had his cases transported by water to an island half a mile from the shore, which again was from two to three miles distant from the principal town. Elaborate precautions were also taken as to prevention of personal transmission of the disease by the attending physicians. Waterhouse, however, thought that the island, as such, was unnecessary, provided that there was used in its stead a hospital, situated a considerable distance from a public road or on a point of land jutting out into the sea. Such was the New England method of isolation, and Waterhouse at once joined issue with Haygarth, both as to clothing and as to the theory that small-pox was not aerially conveyable beyond the patient's chamber. Regarding aerial convection, here is his statement:—

"I would observe that that physician who believed the variolous infection to extend thirty miles and he who supposed it to extend not thirty yards seem, according to our observations, to be equally out of the way. Charleston is separated from Boston by a deep river 1500 feet wide. Close by the water-side in Boston was a house or two infected with the small-pox in one of those dull, foggy days (such as commonly produces a dark day in London), when there was scarcely wind enough to blow the smoke from the tops of the chimneys; yet what wind was stirring wafted it across the river to Charleston. In its direction on Charleston side was a shipyard, and ten or a dozen carpenters at work, all liable to the disease. They all took the small-pox excepting two, and the eruptions appeared at the usual time from that day. We have the clearest proof of the small-pox being communicated to the distance of several hundred roods—viz., from the hospital at West Boston to several families in the neighbourhood. The atmosphere was for many days loaded with aqueous vapours, and the little motion it had was towards the houses where the small-pox made its appearance. The guard (for the hospital was military) which was continually kept prevented all communication."

In a subsequent letter Waterhouse states, as to the cases which produced the cross-river infection, that the dissemination occurred "when several houses were highly infected." As to the exact distance, he adds that since he had first written to Haygarth a bridge had been built across the river, and the previous statement confirmed by measurement. It would therefore appear that there was no bridge when the infection was alleged to have occurred. In trying to reconcile Haygarth's facts and opinions with his own Waterhouse argues in favour of the variability of small-pox infectivity. In America he had noted "the difference in the virulency of small-pox observed at the different periods when epidemic here," and he urged that there may be differences in climatic conditions, differences in the atmosphere, and differences in individual susceptibility as between one time and another, and one nation and another. In Haygarth's reply he tells Waterhouse that it was only the dread of small-pox in New England that made them hurry patients away to pest-houses, and that in this way they were prevented from ascertaining the truth of the view that small-pox could not be aerially conveyed from one room to another in the same house; that they had plenty of fogs in England, but no record of their spreading small-pox; and as to the disease being carried six miles by means of a wig (as had been alleged by Waterhouse), he maintains that according to no known chemical principle could a wig attract miasms from the air and again restore them to it, and that if, indeed, a wig kept on giving forth small-pox virus for six miles it was capable of infecting 15,840 persons standing two feet apart in a line six miles long. Similarly, as to the infection being carried across a river, if small-pox *could* be aerially carried for 1500 feet, then in England "every person susceptible of the distemper *would* (the italics are mine) inevitably be attacked in a few weeks." As to the poison being carried several hundred roods from a hospital, he asked Waterhouse to consider how extreme would be the dilution at this distance, seeing "that the variolous poison is diluted 500 times more at the distance of forty-five feet than in the patient's chamber." Haygarth then goes on to argue that negative evidence is "incomparably stronger" than affirmative evidence. He calculates that, "in any place visited by small-pox, if one has escaped the distemper, it is 19 to 1 he has not been exposed to the infection"; and that "if three in a family have escaped the probability that they were not all three exposed is 8000 to 1."[1] Therefore he holds that the escape of persons within a specified distance, from a source of infection is almost infinitely strong evidence that the infection could not have been carried so far from its source. And now, in the history

[1] This calculation starts with the opinion (based on facts adduced by various writers) that about 5 per cent of all persons born are insusceptible to small-pox. If 19 of every 20 persons are susceptible to small-pox by aerial infection, the chances are 19 to 1 that he will contract it, and that if any person has not contracted small-pox the chances are 19 to 1 that he has not been exposed to it. If two persons in a family do not contract the disease, the chances are 19×19, or say $20 \times 20 = 400$ to 1, that they have not been exposed; and if three persons in a family do not contract it the chances are $20 \times 20 \times 20 = 8000$ to 1 that they have not been exposed to it.

of this controversy, we come to the remarkable fact that Waterhouse in reply expresses agreement with this doctrine of Haygarth as to the value of negative evidence. Though he continued to defend the various examples he had given, yet in yielding this point he yielded his whole case, and it is not surprising that Haygarth, just at the end of his book, is able to relate that Waterhouse, having subsequently had experience of a small-pox epidemic in Boston, had arrived by negative evidence at the conclusion that the virus was not atmospherically conveyable, as he had originally believed. Unfortunately, this letter from Waterhouse arrived too late for publication by Haygarth, so that we have no details as to the negative evidence in question. It is, however, an interesting indication of the nature of the proof that Haygarth relates (from Waterhouse's letter) how, in this particular epidemic, a great number of failures occurred in conveying the disease by inoculation, even after four or five successive attempts, and how very few persons were attacked in the ordinary way, "although many were in the same room with those who had it full out upon them." Haygarth here runs considerable risk of proving too much, even by his negative evidence.

Reviewing, shortly, the main points of this interesting correspondence, we find:—1. That Waterhouse started with the opinions: (*a*) that the small-pox infection depended on variable conditions of virus, of atmosphere, and of subject; (*b*) that it was a particulate poison; and (*c*) that, in regard to the extent of its atmospheric spread, positive evidence was valid, and that negative evidence was to be accounted for by one or more of the several variabilities. 2. That Haygarth held: (*a*) that the infection depended on practically fixed and unchanging conditions, alike as to virus, atmosphere, and subject; (*b*) that the virus was not particulate, but that at any given distance from its source the poison was equally dissolved throughout the whole atmosphere; and (*c*) that, therefore, negative evidence was much more valuable than positive evidence. 3. That Haygarth's pleading led Waterhouse to believe in this superiority of negative evidence, and that the next occurrence of small-pox in Boston furnished him with sufficient of such evidence to cause him to yield to Haygarth's views that the spread of small-pox throughout the atmosphere was to be measured by a few inches, not by hundreds of feet or yards, and that even in a last-century dwelling-house it could not be carried by the atmosphere through an open door into an adjoining apartment. To me Waterhouse's conversion seems to be a very high compliment to Haygarth's persuasive powers, rather than evidence of the truth of the thesis he sought to establish. In the present day it is not quite impossible that we are just a little in need of being warned by Waterhouse's example to avoid the pitfall into which he tumbled. We are, perhaps, too apt to forget that the aerial infectivity of small-pox may vary according to the intensity of the virus, the condition of the vehicle by which it is conveyed, and the state of the subject to whom it is conveyed.

About a year ago, when there seemed to be a likelihood of a prevalence of small-pox in Dumbartonshire, one of the points which I had before me as belonging to the teaching that an outbreak might afford was this question of the aerial dissemination of the disease by hospitals. I therefore took account of the circumstances of one hospital which was likely to be used for Dumbartonshire small-pox, in order to see how its experience might be utilised in this connexion; but at the very outset it became obvious that great, or even insurmountable, difficulties stood in the way. The hospital, which contains altogether 100 beds, eighty being intended for fever and twenty for small-pox, is situated in the country about a mile and a half from the outskirts of Glasgow. Its single gateway opens into a public road. Closely adjoining it on one side is a Board school of considerable size. The school playground is separated from the hospital ground by a stone wall, and the school gate opens into the same public road 100 yards from the hospital gate. On the other side of the hospital there are three rows of miners' houses with a population of about 450, the ends of the rows being close to the same public road and all of them having their only opening into it. The distance of the small-pox pavilion from the nearest dwelling-houses in this village is about 340 ft. A dirty ditch runs between the gardens attached to these houses and the hospital ground. On the opposite side of the road from the hospital there are a few colliery houses, and the only outlet from these is into the same public road. Now, if I state regarding this population that small-pox began to spread in it within a fortnight of the hospital's containing a given number of acute small-pox cases, that at the same time certain atmospheric conditions prevailed, that the hospital administration was practically perfect, that no small-pox patients walked in on their own feet, and that the ambulance man was a staunch teetotaler—if all this and more be stated, I have yet considerable misgiving that a reply may be made that the existence of small-pox around the hospital is to be accounted for by personal communication, that the school children were bound to be running after the ambulance waggon, that intercourse must have gone on between the hospital and the village, and that, indeed, no such evidence can be accepted in favour of aerial convection. But, as a matter of fact, I have no such story to tell. The general administrative precautions very much resembled those of the London hospitals in 1881. The members of the nursing staff had an afternoon out every week and were free on every second Sunday. The engineer and some of the ambulance staff lived outside the hospital. Coalmen, a plumber, and a man to cut the grass came and went, school children were sometimes on the road when the ambulance passed, and, in short, the usual possibilities of personal communication existed. The number of acute cases in the hospital at any one time was small, and neither by aerial convection nor by personal conveyance did a single case occur in the families to which the school children belonged nor in the mining village. If I am right in supposing that spread of small-pox here would very likely have been attributed to personal communication, is the absence of the disease to be set down to the want of ability of personal communication to spread it? If not, then we arrive at the position that such a hospital is capable only of telling, either affirmatively or negatively, in favour of personal communication and never in favour of aerial conveyance.

The point of these observations is, that if we are to arrive at correct conclusions on this subject we must weigh the evidence carefully and fairly as between the *likelihood* of personal communication, on the one hand, and the *likelihood* of aerial convection, on the other. We start with the assumption that small-pox may be conveyed either personally or aerially, and the matter in dispute seems to be narrowed down to this: (1) Do we know personal conveyance of small-pox to be so very frequent and constant and certain in its operations as to justify us in thinking it the more likely way to account for all the facts of such very remarkable and repeated outbreaks as are recorded to have occurred in the areas around some of the Metropolitan Asylums Board's hospitals, and especially around Fulham Hospital? or (2) Is it, on the other hand, more probable that some of the facts are to be attributed to an ability of small-pox virus under special conditions to be conveyed aerially to a distance considerably beyond that which has hitherto been generally admitted? In a recent able report by a medical officer of health the case was put thus: "Some observers, oblivious or regardless of the daily and hourly opportunities of small-pox infection being carried out of hospitals by the door, in their desire to account for outbreaks have even gone so far as to maintain that it had flown out by the windows and have professed to be able to measure such flights by the quarter-mile." However, the question here is whether the small-pox contagium resembles more closely the cockroach, which crawls out at the door, or the house fly, which makes its escape by the window; or does it not rather find its analogy in those groups of insects which are provided both with running legs and with wings, and is it not our present object to judge as to which of the two possible methods of progression best explains certain facts belonging to its life history? In the first place, regarding personal communication, let me quote from a letter by Professor Wall of Oxford to Haygarth, contained in the work to which I have already referred:—"How comes it to pass that apothecaries, inoculators, nurses, &c., are continually going from house to house, while they are attending small-pox patients, without any care, and in ninety-nine cases out of a hundred without communicating the disorder to those who have not had it?" Is there not, after all, a good deal of truth behind this query? Everyone believes that a medical man may convey infection from one house to another; but if we consider the number of his outgoings from infected houses in any given week or month or year, even in the presence of a small-pox epidemic, or in his whole lifetime, and consider relatively to these the number of cases in which any atom of reasonable suspicion exists that he has conveyed disease, we get some indication of the value to attach to the entrances and exits belonging to hospital administration, many of them referring to tradesmen

and others who never enter a ward and have no direct opportunity of having their clothing infected; while as to the nursing staff, the precautions observed as to the ablutions and change of clothing are far in excess of anything that is possible to a general practitioner. No doubt, however, it is here to be borne in mind that persons regularly on duty in a small-pox ward require more thorough disinfection than a medical practitioner on his daily rounds.

One or two instances have struck me particularly in reading the more recent literature that has grown up around this question. The dustman of one of the Metropolitan Asylums Board's hospitals contracted small-pox, and though he was doubtless removed to hospital immediately on the disease declaring itself he succeeded in infecting members of his own household. These people, therefore, were susceptible to the disease; but, for years before, that dustman had been going in and out of the hospital carrying on his work of refuse removal there, and in and out of his own home, and yet he had never brought infection within his doors till he himself was seized with the disease. Similarly, in the course of the Fulham inquiry, no case was found of small-pox occurrence in the houses visited by officers and servants of the hospital, and nine non-resident servants did not carry the disease to their houses in nine different streets. Again, in considering one particular group of cases thought to be due to aerial convection, Mr. Power tried to exclude all those cases as to which personal conveyance could be in the least suspected. One excluded case was that of a man who had had something to drink in a beershop together with the driver of an ambulance waggon. How many other people may have been drinking at that time, or on other journeys, with this driver, and yet not have been infected by him? This question of the influence of ambulances in spreading the disease around hospitals was before the Commission of 1881 at some length. On the one hand, it was in evidence that the service was sometimes badly managed—that the driver might stop at a public-house on the way, and that children might "hang on" behind the van. On the other hand, it happened that some ambulance routes were pretty well fixed, especially near the hospitals, and that in the streets regularly traversed by them there was no special prevalence of the disease. This fact is noted not only regarding Fulham Hospital, but also by Dr. Bristowe as to Deptford Hospital; indeed, examination of details seems to show that the quadrant of the mile circle containing the chief line of human intercourse with Fulham Hospital chanced in 1881 to have a smaller percentage of its houses attacked by small-pox than any of the other three quadrants. It is true that people living in one street might encounter the ambulance in another, and be found to be suffering from the disease a fortnight later; but it is equally true that on any sufficient basis of facts a larger proportion of people belonging to the streets traversed by the vans would be exposed to the ambulance influence than of people belonging to other streets. And in regard to those who met the van in one street and lived elsewhere, it would be a very extraordinary thing if the houses to which these people returned happened to be arranged in numbers diminishing regularly according to the distance from the hospital to which the van was travelling. It would be still more extraordinary if this same regularity of arrangement was found to repeat itself around the same hospital in epidemic after epidemic. It is a remarkable fact that one witness who maintained the view that hospitals were not centres of infection, either aerially or by personal transmission, pointed in support of his thesis to one street in particular—a lane only 10 ft. wide, closely adjoining Homerton Hospital, and forming a passage for nearly all the ambulances that entered its gates. There had been only one small-pox death among those living in this street in the decade 1871–80; but on turning to the number of inhabitants attacked in this thoroughfare I find from Dr. Tripe's figures that they amounted to 13 per cent. of the average total of inhabitants, a proportion which, in comparison with that of the adjoining streets, through which the ambulance did not habitually pass, was higher than some and lower than others. Similarly, it was pointed out that some of the persons who were attacked within the "special area" surrounding the hospital might have contracted the disease in other parts of London to which their daily avocations took them. This is so; but again, is it likely that these people would come home and settle themselves down in regularly decreasing circles around the small-pox hospital? It is not to be denied, however, that, excluding ambulances which had pretty clearly defined routes of traffic to the hospital, and excluding introductions of the disease from other parts of the metropolis, such small-pox as depended on personal communication from the hospital would tend to range itself in radii corresponding to the lines of communication with the hospital, the amount decreasing with the distance; and I do not for a moment suggest that personal conveyance of one kind and another had not a great deal to do with the matter. Here, as elsewhere, many groups of cases would be secondary to, and directly connected with, foci outside the hospital, and it is in no way surprising that evidence of conveyance of this kind was able to be put before the Commission; but such foci, unless the mischief done by them was always equal, might tend rather to disturb than to emphasise gradation from centre to periphery. It appears that in the locality around Fulham Hospital practically all cases were sent to hospital after their discovery. It has never been suggested, however, that aerial convection excludes personal communication or that the area around the hospital forms an unsuitable field for the latter method of spreading the disease. The question is, Is personal communication the most likely way to account for all the facts?

Coming now to the subject of aerial convection, both in Waterhouse's time and more recently, various theoretical considerations have been adduced with regard to the possibility of the survival of infective power through the requisite space for the requisite time. The distance to which an animal odour like the smell of the skunk can be carried, and the phenomena of hay fever, are instances in point. Too much value may easily be attached to such analogies, and they might be used in support of a thesis that measles or whooping-cough or typhus fever can be conveyed for long distances. I may note, however, that Dr. Waterhouse quotes from Dr. Aspinwall to the effect that "it is a fact well known to every ploughboy that a skunk can be smelt much further in a dampish, foggy evening than in serene weather." The length of time during which a lancet charged with small-pox matter can retain its inoculative power is more to the purpose, but very exact and careful observations would be needed to give evidence of value here. All we seem to know is that certain animal emanations are not affected by long travelling through the atmosphere, but whether or not this is true of small-pox under any circumstances is a question that must be settled by evidence; and there may be very important distinctions between the length of duration of the quality of smell by non-living material and the length of duration of powers belonging to what current pathology teaches to be a contagium vivum. Probably, however, Sir Thomas Watson fairly represents the consensus of opinion in his own day when he says "there is no contagion so strong and sure as that of small-pox, none that operates at so great a distance."

Throughout this address I am assuming that the members of the Epidemiological Society are well acquainted with the general lines of the Fulham investigation. I do not, therefore, propose to recapitulate the evidence, nor to point out how, when patients suffering from small-pox were not being received into the hospital, as in the periods antecedent to March, 1887, and from the end of 1881 to May, 1884, there was neither any special incidence of the disease in the one-mile area around the hospital nor any regularity of distribution in quarter-mile belts within the mile area of such small-pox as did exist; nor how, on the other hand, when the hospital came to be in operation, its surrounding mile area became specially affected, and how at the same time the subdivisions of this area were affected relatively to their propinquity to the hospital; nor how these phenomena have been observed with remarkable regularity in one epidemic after another; nor how the parishes in which small-pox hospitals were completed in 1871 or afterwards had their small-pox prevalence altered relatively to that of parishes which contained no such hospitals, so that some parishes which aforetime had been comparatively exempt from the influence of small-pox epidemics came under that influence to a very remarkable extent and displaced other parishes which had formerly headed the list; nor how the positions of the parishes containing small-pox hospitals varied according as these hospitals were closed or in active operation.

In the evidence given before the Royal Commission two groups of cases occurring within the "special area" of Fulham Hospital yield an interesting comparison. The first group was reported by Dr. Dudfield, medical officer of health of Kensington. It included 41 cases, occurring, after the establishment of the epidemic, in Ifield-road, a thoroughfare

about 800 feet from the hospital. Dr. Dudfield indicated that, as a rule, his main concern in such matters was rather with the stamping out of the epidemic than with the tracing of connexions between cases, and that, indeed, much of such inquiry was usually made through inspectors; but nearly a year after the first of the cases had occurred, and after some of the people had left the locality and could not be found, he made more particular investigation, and succeeded in ascertaining personal communications from one to another of about half of these cases. They occurred, not simultaneously, but in succession, and there can be no doubt as to the soundness of Dr. Dudfield's inferences of cause and effect between these cases. The other group of cases to which I have referred is reported by Mr. Power. For four weeks after the opening of Fulham Hospital, near the end of 1830, there were no small-pox attacks in Chelsea, Fulham, and Kensington, the parishes nearest the hospital. In the next four weeks there were 11 attacks in these parishes, 7 being within the mile area. These were mostly explicable by personal communication. Then suddenly in the next fortnight the attacks in the three parishes mounted to 62, of which 47 were in the special area and 11 more within half a mile of it. Of households there were 56 attacked, 41 being within the special area and 11 within another half-mile. Next it is noted that of the 62 cases 42 were attacked during the five days Jan. 26th to Jan. 30th, 32 being within the area and 8 more within half a mile of it. The facts as to these 32 cases were very carefully investigated, especially as regarded the proceedings of the patients a fortnight previously. In 9 cases reasonable suspicion could be entertained of infection from personal communication. As to the other 23, no such evidence was obtainable. The cases were dotted throughout the populated part of the special area, and were unconnected with each other or with any known source or sources of infection, either from hospital intercourse or otherwise. At the time when they must have been infected only one case of the disease, so far as most elaborate inquiry could ascertain, existed in the special area, and small-pox was almost absent not only from the three parishes, but also from those lying between the hospital district and the East-end of London, where there was a certain prevalence of the disease. Meteorological inquiry elicited the fact that the period from Jan. 12th to Jan. 18th—that is, a fortnight preceding the outbreak—was "characterised by still, sometimes foggy weather, with occasional light airs from nearly all points of the compass." These conditions singularly resemble those which Waterhouse had long before recorded as accompanying similar outbreaks, and, indeed, I may note in passing that the similarity of the conclusions arrived at by the two observers is a very striking fact in view of the obvious inacquaintance of the later investigator with the ground that had been traversed by the New England professor a hundred years before.

It is of great consequence here to note what were the inquiries made so as to exclude the likelihood of personal conveyance. They are stated as follows before the Royal Commission: "I took all possible means. I did not finish off a case, so to speak, at one sitting, but went back to it, and, as well, got additional information from friends, and so on; and then I reconsidered the case and tried, so to speak, to live over again the attacked person's life during the time when I regarded him as having become infected. And thus I returned again and again to a patient with a view of getting information upon a point I might have overlooked or that he or his friends might have overlooked. A great many of the people got interested in the question and thought the thing over with me. For instance, a commercial traveller sent home for all his official books as to his daily doings, and we went through the whole thing together, as to where he was at this and that hour on each of certain days. Wherever they could the people helped me very much, and the neighbours helped me too. I do not think anything was missed, because I was morning, noon, and night in the hospital or about it seeing the people and their friends. I used to deal with the patient in the first instance—that is, if he was well enough, and few were so ill in the early stage of their attack that they could not give account of themselves. I would first ask them questions as to whether there had been any illness in their house, however trivial, and then go through with them their doings on particular days, when I supposed they might have got their infection. I would ascertain whether on particular days they were in the district and where, or out of the district and where, with a view to ascertaining whether they could have got their small-pox within the district or outside of it. And I asked special questions as to whether they could have had communication with antecedent cases that I knew of as having occurred in the district, and from which they might have got their infection. I cross-questioned them backwards and forwards in that way. Now and again I did get some sort of information, which led me at last to surmise that they might have come across small-pox infection irrespective of the hospital; but still in the large majority of cases I could not get even a suspicion of that sort. I was puzzled altogether about it." It seems to me that there is a very obvious contrast between these two outbreaks, recorded respectively by Dr. Dudfield and Mr. Power. The one outbreak occurred after small-pox had been established in the district, the other preceded a general prevalence of the disease. The one outbreak belonged to a particular street, the other had its cases dotted all over the special area. The one outbreak had its items occurring in succession either of individuals or households, but in the other the cases occurred simultaneously. In the one outbreak 50 per cent. of the cases were traceable to personal communication, partly by means of lay inspectors mainly interested in isolation and disinfection and partly long after the occurrences by Dr. Dudfield's own special inquiry; but the other gave no indication of causal relationship between 23 cases, even though investigated when the outbreak was in progress by a skilled inquirer specially bent on hunting out all possible sources of origin. Surely, if we accept the one outbreak as indicative of personal communication, we cannot logically refuse to accept the other as indicative of aerial convection. It happens, too, that of the cases recorded by Mr. Power as belonging to the special outbreak of Jan. 26th to Jan. 30th, twelve occurred in Kensington, and, therefore, in Dr. Dudfield's own territory; and I learn from the proceedings of the Commission that, in view of Mr. Power's report, Dr. Dudfield set himself to investigate these twelve cases, again mainly at a considerable interval after their occurrence. Like Mr. Power, however, he entirely failed to get any trace of their origin, so that we have here a most competent observer who successfully traced, even under the difficulties mentioned, 50 per cent. of one set of cases and yet was quite baffled by another set which had equally baffled a previous inquirer.

In his evidence before the Commission Sir John Simon, with characteristic caution, stated that, while he attached great weight to the evidence already produced in support of aerial convection, he would wait for further confirmatory evidence. This requirement has to a great extent been fulfilled. As a result of the original inquiry, and of the work of the Royal Commission, Fulham Hospital was put on its mettle. Those in charge of it knew how much might depend on their success or failure in preventing the spread of infection by personal communication, and we need not doubt that no stone was left unturned in the endeavour to prevent subsequent confusion of issue. The outgoings of the staff were reduced to a minimum and increased stringency was observed in every detail. Yet, when the next outbreak occurred in 1884–85 the result was practically as before. All the extra care taken failed to lessen the incidence in the special area per 100 admissions of acute cases to the hospital; indeed, the number of acute cases within it was remarkably small when, in the presence of weather conditions resembling those formerly noted, a "special area" outburst occurred. It was further observed, however, that these meteorological conditions, repeating themselves subsequently, were not always accompanied by increased infection around the hospital. In view of such facts, it is obvious that there is still much to learn regarding the whole question, and it is open to us to speculate whether the rhythm of epidemic and non-epidemic periods includes, as by analogy we may easily believe it to include, shorter rhythms of ebb and flow of infectivity, having to do not with whole seasons, but with weeks or days. In this aspect of it such special outbursts as have been noted might be looked upon as spring-tides of infection.

From October, 1884, a part of Fulham Hospital not previously used for scarlet fever came to be devoted to that disease. The management, as regards laundry, nurses, and servants, was quite separate from that of the small-pox wards, the only official in common being the medical attendant, who, of course, was well aware of what had been alleged regarding personal communication, and who, we may assume, was correspondingly careful. In the fortnight ending Dec. 6th, following the opening of these scarlet fever wards, there was great increase in the admission of acute cases

of small-pox, and excessive spread of the disease in the special area. At this time, four cases convalescent from scarlet fever were attacked by small-pox, and all the others were at once revaccinated. These four cases constituted 10 per cent. of the total scarlet fever cases; but no small-pox case was attacked by scarlet fever, and it is noteworthy that the hospital did not act as a centre for the spread of scarlet fever or typhus fever, or any other such disease in the special area. We know very well that these diseases, and especially scarlet fever, can be conveyed by personal communication, but, as a matter of fact, the administrative procedure of the hospital did not spread even scarlet fever; and if it be replied that perhaps small-pox is conveyable further and more surely by fomites than is scarlet fever, the comment is obvious that in that case small-pox is likely also to be further conveyable atmospherically.

In conversation recently with Dr. Ernest Marsh, who had charge of the small-pox wards at Belvidere Hospital during the past year, I was informed that one scarlet fever ward had its windows forty-eight feet from the nearest small-pox ward, and that the only one of the scarlet fever patients whose vaccination was not attended to was a little boy who had never been vaccinated and who straightway was attacked by severe small-pox. The administration here was entirely separated, even as to medical attendance, and a barricade thirteen feet high separated the one part of the hospital grounds from the other. Similar instances of aerial convection measured by feet are not uncommon, and the facts are, of course, much more easily proved than where hundreds of yards are in question. Dr. Septimus Gibbons mentioned to the Commission a case in which a distance of twenty yards intervened, Dr. Richardson a case of thirty feet, Dr. Munk a case of forty-one feet, and so on. And long before the theory of distant aerial convection was formulated Drs. Gregory and Marson, of the original Small-pox Hospital, strongly insisted on a belt of 150 feet around the hospital, and their successor, Dr. Munk, supported the same view before the Commission. I have already incidentally mentioned, as part of the thesis of aerial convection, that it depends on acute cases, not on convalescents. Probably it will not be denied that personal communication, both of scarlet fever and of small-pox is likely to occur during desquamation in the one case and the separation of the crusts in the other; but one of the earliest facts ascertained as to Fulham Hospital was that when it was devoted entirely to convalescents, who were conveyed there in large numbers under the same ambulance arrangements as were criticised when acute cases were in question, small-pox did not spread in the special area. At that time the outgoings of servants, visitors, and tradesmen were singularly powerless. At Darenth Hospital 600 convalescents failed to spread the disease. As with regard to distance, so with regard to limitation of admissions of acute cases there is observable a tendency to give effect to the thesis while not formally adopting it. Various witnesses mentioned various numbers to which they would restrict the totals of cases under treatment in any hospital. Of mixed cases, such figures as 150, 100, or 80 were given; and of acute cases one said 50 or 60, another 20, and so on, and in later epidemics the numbers in the intra-urban hospitals were limited first to 50, afterwards to 25, and finally small-pox was altogether excluded from them.

The above are the main points that have impressed themselves on me as supporting the view that small-pox may sometimes be aerially conveyed to a relatively long distance. It is not my purpose to do more than refer to the confirmatory evidence recently yielded by the outbreaks in Oldham and Warrington as recorded by Mr. Niven and Mr. Gornall. Probably here, as elsewhere, both agencies may have been at work, but it is certainly of consequence that these observers have not been able to account for some of the facts that came before them unless by acceptance of the atmospheric theory. In the course of his report for 1893 Mr. Niven says: "Is this increased incidence round Westhulme Hospital due to aerial diffusion or to faulty administration of the hospital, leading to direct contact between the untraced cases and the officials of the hospital a fortnight before their attacks? I may say at once that I am satisfied that no such contact has taken place. Whether in isolated instances small-pox may have been caught by coming too near the hospital it is difficult to say. For the most part that possibility could be excluded." Mr. Gornall says: "The statistics as to the relative incidence upon the specially afflicted area and its several parts most clearly agree with what we should expect with air-borne infection as the explanation of our difficulties." As to foreign evidence, a paper by Sir John Cormack in the *Edinburgh Medical Journal* for 1831 shows that in Paris facts more or less similar had been observed in connexion with hospitals there.

Of the arguments urged against the theory, by far the most striking is that regarding the incidence of the disease on certain institutional populations within the special areas. These, indeed, claim to furnish a series of control experiments in which absence of small-pox was suggested to be due to absence of personal communication as a result of careful administration. One of the members of the Royal Commission put the case very strongly to a witness who inclined to support the theory of aerial convection. He referred to "the fact that in some cases workhouses are actually overlooking the grounds of a small-pox hospital with actual immunity from small-pox." Similarly, Dr. Dudfield, in his evidence, said: "You know the case of Homerton Hospital, which is from 90 to 100 feet distant from the City of London Infirmary, in which no case of small-pox has occurred since the hospital has existed; that is a case which I have very much relied upon myself, and I know it has had great weight with my colleagues, the medical officers of health." With reference to the same institution the Commissioners stated in their report that "the workhouse had scarcely any case in the epidemics of 1871–77, when the disease was extremely prevalent in the surrounding streets, although at that time the inmates were not protected by revaccination. The same may be said of the Hackney Union Workhouse and Infirmary, which are about a quarter of a mile from the Homerton Small-pox Hospital." The strength of the argument thus set up against aerial convection is so obvious that it is of importance to look into the details of the facts on which the argument is based. The institutions in question were of two classes, workhouses and Poor-law infirmaries, the former being capable of much more thorough protection against personal communication than the latter. Eight of such institutions were mentioned, four being about half a mile from Fulham Hospital, one about a quarter of a mile and another about 200 feet from Highgate Hospital, and one (Hackney Workhouse) about a quarter of a mile and another (the City of London Workhouse) about 100 to 200 feet from Homerton Hospital. No details are given as to the institutions related to Fulham Hospital, but as the distance was considerable this absence of information is of less consequence, especially as the fullest statement of facts has to do with the institution which was nearest to a small-pox hospital—viz., the City of London Workhouse, adjoining Homerton Hospital. In Dr. Bridges' report of January, 1831, republished by the Royal Commission, he wrote: "I have made careful inquiry for any case of small-pox occurring in this workhouse during the present or previous epidemics among the inmates, but I have only been able to find one, and this one not attributable to the hospital." It seems probable that this statement may have been that which weighed with Dr. Dudfield and the medical officers of health, and which was also in the mind of the member of the Royal Commission in the above quotation. But in Dr. Bridges' evidence before the Commission, nearly a year later than the date of his report, he puts the case less decidedly in these words: "I have stated in my report that in the City of London Workhouse ..... very few cases of small-pox have occurred." Subsequently Dr. Aveling, the medical officer of the workhouse, put the exact figures before the Commission (Qs. 5037 and 5059–60). He stated that 17 cases had occurred in the eleven years ending Dec. 31st, 1881, and that certainly 12, and possibly 15, of these contracted the disease within the institution. The number of inmates is given as 450. Next, the facts as to vaccination require careful attention. In the decade there were three epidemics, the first being by far the worst. The second began about the beginning of the summer of 1876, and may be said to have extended to the end of the summer of 1879. It caused about 3600 deaths in London. Some 650 of these occurred previously to the end of 1876, and the remainder (approaching 3000) after that date. Now Dr. Aveling states (Q. 5043) that in the workhouse 'revaccination was begun properly at the end of 1876, so that these eleven years are divided into two series of six years when revaccination was not properly enforced and a subsequent period of five years when it was tolerably enforced." As to the second epidemic, therefore, we see that less than one-fifth of it had passed before general revaccination

was instituted; and it is to be particularly noted that of the total 17 cases 13 occurred in the period ending 1876. In the various streets within a quarter-mile radius of the hospital the percentage of the population attacked in the ten years 1871-80 ranged from 4 per cent. to 25 per cent., the average being 9 per cent.[2] In the workhouse, on the other hand, only some 3 per cent. were attacked. The difference is certainly considerable; but the fact that the cases in the workhouse practically stopped after 1876, when revaccination became part of the administrative system, goes far to account for the low attack-rate calculated over the whole eleven years. Whether, in addition, anything is to be attributed to the age-distribution of the workhouse inmates or to previous small-pox or to the well-regulated conditions as to ventilation, cleanliness, &c. under which they were compelled to live, are questions as to which I have no information; but, on the hypothesis of atmospheric diffusion, it seems likely that people who are mainly kept within doors will be less exposed to infection than persons who walk abroad in the special area without restriction of any kind. In regard, however, to the whole comparison, it is to be borne in mind that the theory of aerial convection does not exclude that of personal communication, and in addition to the influence of revaccination some part of the difference above indicated may well be due to excess of personal communication outside the institutions as compared with the amount inside; indeed, it is interesting to notice how this very theory comes in with regard to these workhouse cases. The general thesis was that the absence of small-pox was due to the absence of personal communication, and that in particular this absence of personal communication was characteristic of workhouses rather than Poor-law hospitals; but when attention was fastened on the fact that not 1, but 12 or 15 cases *had* occurred within the workhouse, then at once it was adduced in explanation that "the visiting had only been stopped at one place one time, and that for a very short time; visitors came once a month." In Hackney Workhouse and Infirmary, which was about a quarter of a mile from the hospital and had in the eleven years 1870-81 an average of 643 inmates, the total number of small-pox cases originating within it amounted to about 20, again about 3 per cent. It was the custom here to vaccinate very early all children born in the institution and to offer revaccination to all the inmates, but a good many refused it. The facts, therefore, are not unlike those relating to the City of London Workhouse. As to the other institutions mentioned, their officials were not called on for evidence, so that detailed examination of the figures cannot be made. In going over this part of the evidence in the Royal Commission's Report I made a note to this effect: Were there no other equal populations, not institutional (and, therefore, with no check on personal communication), within the special area which equally escaped? Near the end of my reading I found attention called to the fact that within a quarter of a mile of Fulham Hospital, within the north-west segment of the circle, there were 121 houses which had entirely escaped from May 25th to the middle of September, though 153 admissions into the hospital had taken place during that time. Here, then, was a place which, as regards administrative effort within it to prevent personal communication, was at the opposite pole from the workhouses, but which yet had not had a single case of small-pox during these months. The evidence, however, was adduced, not to throw doubt on the power of personal communication, but on that of the rival theory of aerial convection; but surely the facts are as applicable to the one theory as to the other. On the whole, I do not think that this evidence regarding these institutions can be looked upon as at all sufficient to counterbalance the evidence on the other side.

The practical conclusion of the whole question may be said to have already been arrived at. Small-pox hospitals are not now erected in the midst of towns, and those already in existence are being more and more sparingly used; indeed, where the power of aerial convection is still doubted it seems to be assumed that the prevention of personal communication is impracticable and that accidents incidental to the system of hospital treatment of small-pox within populous districts must be accepted as inevitable, so that the only remedy under the one theory, as under the other, is the removal of such institutions to a distance from populous places.

[2] See Table, p. 43, Report of the Royal Commission.

Summing up the evidence, so far as it is possible to sum up on a subject as to which so much is still to be learned, we seem to reach the general conclusion that, as a result of the simultaneous action of causes favourable to the spread of infection, the contagion of small-pox may sometimes be conveyed atmospherically to a distance much greater than had been usually admitted—a distance measurable by quarters of miles. In endeavouring to summarise the agencies which have to do with this result it is necessary to bear in mind that other unknown agencies may also be involved, and that sometimes the joint action of all the known agencies may not be necessary, special activity of some, perhaps, atoning for relative deficiency or absence, and *vice versâ*, of others. Keeping this in view, the factors whose coincident operation can produce the result in question may be subdivided as having to do with (1) the contagium, (2) the atmosphere, and (3) the population. 1. There must apparently be intensity of virus depending on (*a*) the period of the epidemic, a rising epidemic being important, (*b*) concentration of acute cases as centres of infection, and (*c*) possible minor waves of epidemicity referring to particular days or weeks, these waves constituting flood-tides of infectivity. 2. (*a*) A foggy condition of atmosphere or light winds appear to be of consequence, as observed both by Dr. Waterhouse and Mr. Power; and (*b*) possibly only the atmosphere of towns or cities may possess the necessary carrying power. No good evidence has yet been adduced of such occurrences in connexion with hospitals situated in rural districts; but, no doubt, the failure here may be as much owing to want of population as to atmospheric condition. 3. Bearing in mind the conclusions arrived at by Dr. Whitelegge in his Milroy Lectures, it may well be the case that part of the influence of a rising epidemic is due to the existence in any special area of a greater or less number of persons specially susceptible to small-pox and easily infected by its first active onset. The supply of such persons would be rapidly diminished or exhausted, and would not be renewed in the course of any single epidemic.

ON THE CONNEXION BETWEEN CHEMICAL CONSTITUTION AND THERAPEUTIC ACTION.

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IT has been of late years the hope of medical men, if not their assurance, that chemical knowledge—the acquaintance with the atomic structure of molecules—will lead them to a more accurate understanding of the working of such molecules upon living organisms. Certain it is that, more recently, pharmacology and therapy, investigating on chemical lines, have possessed themselves of numerous compounds, whose action they in a manner foresaw, and indeed sought of malice prepense. In proof of this statement, one need only point to the long list of antipyretics and antiseptics on the one hand, and of anæsthetics and soporifics on the other, which have been obtained from the aromatic and fatty series respectively. These for the most part are modern acquisitions; but if they are hopeful signs—and they would be even more so if the soil out of which these bodies sprang was not so alarmingly prolific—there yet remain for chemistry and pharmacology to solve riddles so puzzling that one is compelled to reconsider the grounds on which belief in a definite relation between chemical constitution and therapeutic action is based. It is proposed to deal with this subject as follows: (1) to state the problem as it stands practically; (2) to consider its chemical aspects; and (3) to discuss its therapeutic or pharmacological aspects.

The problem of the relation between chemical constitution[1] and therapeutic action requires proving—(*a*) by demonstrating that, in a series of compounds containing as a constant one element or group functioning as an element, there is traceable a corresponding constancy of effect; and (*b*) by demonstrating that in a series of compounds built up

[1] Perhaps one ought to differentiate between composition and constitution, reserving the former term to describe differences in the number and nature of the elements present in compounds, and the latter to describe the arrangement or grouping of the elements—i.e., structure proper,—but to avoid complication I shall make no such distinction.

on the same type there is traceable a constancy of effect corresponding to the constancy of type. Thus (*a*) will be proved by showing that in a series such as the bromides a certain degree of constancy of action is present, the cause of this being the presence of the constant bromine. [This, provided that one limits oneself to the simpler inorganic compounds consisting of but two elements in the molecule, will be the whole of the problem, for structure as such will hardly come into play, one arrangement only being possible between two elements.] And (*b*) will be proved by showing that in a series of bodies, such as the fatty or aromatic compounds, a constancy of effect belongs to the constancy of type. If one may have recourse to simile, the problem here put is such as would require solution if, with a double series of hospitals built respectively on the linear-pavilion and circular-ward block systems, it were asked whether a similarity of service and administration belonged to each system independently of the number of wards and beds comprised in each hospital. Into the larger problem (*b*) the question (*a*) of identifying a given element or group of elements may also enter in the same way as in the hospital series the introduction into either system of, say, a fever ward would raise the question of the means of identifying the infectious element thus incorporated, for example, from the change necessitated in the service and administration.

To examine now the chemical aspects of the problem. What does chemistry promise as to the possibilities or probabilities of tracing an element through a series of compounds—i.e., of recognising the individual characteristics of the element after it has become chemically united with other elements? It must be confessed that it promises very little, if indeed it does not actually assert the impossibility of such recognition. Every treatise on chemistry contrasts mechanical admixture with chemical combination and shows that, whereas in the former the constituents still retain their characters, in the latter these characters are lost.[2] It would be superfluous to exemplify this point, for it has become an axiom that when two or more elements combine chemically the resulting compound or compounds differ essentially from their constituents. When one turns to physics one is the less prepared for this teaching, since here a more fundamental law presents itself—viz., that of the composition of forces—with the statement that when two or more forces act upon a body the resultant manifests all the qualities of the components. But is there not in the chemical compound the exact counterpart of the physical resultant? And if so, what is the meaning of these opposing laws? A closer examination reveals the flaw in the argument, and shows that the physical resultant does not answer to the chemical compound, but to the mechanical mixture; for when several forces act upon a body each force remains distinct and exerts an independent effect upon the body. These separate effects may coöperate or thwart each other, but in any case it is their algebraical sum which represents the combined or resultant effect. In like manner, when salt and sugar are placed on the tongue simultaneously, each substance retains its identity, and on the sensory nerves an effect compounded of saltness and sweetness is produced, which may truly stand as their resultant. It is not so in the case of chemical union, for here intra-molecular rearrangements of the most vital importance take place, and one looks in vain among the products of such union for the qualities of their constituents. Perhaps no more striking instance of the completeness of the transformation which obtains during chemical union can be given than that which is observed when hydrogen, carbon, and nitrogen unite to form prussic acid. Separately or mixed—e.g., as a dust of carbon diffused through an atmosphere of hydrogen and nitrogen—these substances would exert practically no effect upon living animal tissues, but in combination as prussic acid they yield a body whose malignity towards the same tissues it would be hard to surpass. The physical resultant, then, is not the counterpart of the chemical compound, and whilst one may rightly claim to find in the former the characteristics of its components, one is not justified in expecting this in the case of the latter. All that is at present known of this gulf between physics and chemistry is that it is a wide one and that it has yet to be bridged.[3]

Certain further considerations will enable one to glimpse the magnitude of the changes possible during chemical combination. The progress of chemistry since the time of Lavoisier has been in the direction of a multiplication of the elements, and of these there are now available some seventy, with the promise of more; but certain curious relations between the atomic weights of these elements have led to the establishment by Mendelejeff and Lothar Meyer of the so-called periodic system, and this system suggests very strongly the existence of a primary underlying substance of which the elements are but multiples.[4] How Dalton's theory and the periodic system may be made to harmonise is of no moment, but it is clear that if the elements are not elements, but aggregates, one will be the less surprised that during chemical combination such rearrangements shall occur as shall effectually obscure the original groups. Accordingly even in the apparently simple molecule formed by the union of two elements it must be admitted that the question of structure may play an important part—a position contrary to that which, for simplicity's sake, has been already postulated. But, wide of all theory, there is the remarkable fact of allotropy which several elements exhibit, though none more strikingly than carbon. In the case of this element there is seen a primary and undecomposable substance manifesting itself in three forms—as graphite, charcoal, and the diamond—which forms differ among themselves as much, perhaps, as any three elements, at least in respect of physical characteristics; but if it be possible that one and the same element can, in the uncombined state, assume such very different appearances, what grounds are there for expecting uniformity of manifestation when such element enters into the complicated relations of chemical combination? If, however, one should still persist in demanding uniformity, will it be, in the case of carbon, the uniformity of charcoal, or of graphite, or of diamond? And it must be remembered that these varieties of carbon differ not merely in their external form, but in their intimate relations to heat, light, and electricity, and even in their behaviour towards chemical reagents.[5] These considerations have the more weight, as regards carbon, when it is remembered that this element stands as the central figure in the complex groupings of organic chemistry, which, otherwise named, has been called the chemistry of carbon compounds.[6] But, it will be said, do not potassium salts resemble each other in their chemical characteristics, and sodium and lithium salts likewise? Nay, more, do not potassium and sodium and lithium salts show certain group resemblances one to the other? And are not these the very proofs that are demanded? By no means conclusively, for when it is said that potassium salts resemble each other one means that most of them are freely soluble; that with platinic chloride they unite to form a crystalline precipitate, that they impart to the Bunsen flame a definite colour, which colour has a definite spectrum, and such like. Of the similarity of sodium salts one would bring forward similar resemblances, and in like manner of lithium salts. But what is the value of such proofs? That, with a given substance, a certain class of salts will yield a definite precipitate is proof merely of similarity by decomposition and recomposition; it is no proof of similarity of the salts in their integrity. To point to the fact that charcoal, graphite and diamond, when burnt in oxygen, all yield carbonic acid is no proof of the similarity of the unburnt charcoal, graphite and diamond. This same objection holds for the evidence by spectrum analysis, for this test probably involves the decomposition of the salts examined; and, again, the fact of solubility being a characteristic of a class of salts fails to help much, since so little is known of the nature of solution and of the state in which bodies exist whilst in solution, whether, for example, the process is physical, or chemical rather. What one desires to know is the resemblance between, say, potassium oxide and potassium chloride, of potassium bromide and potassium sulphide, *whilst these bodies maintain their integrity*. Is evidence of this kind forthcoming?

The question of the resemblance of, say, the salts of potassium to the salts of sodium is not quite so simple. To

[2] Cf. Roscoe and Schorlemmer, vol. i. pp. 44, 51, 1881; also Lothar Meyer, Outlines of Theoretic Chemistry, translated by Bedson and Williams, p. 7.

[3] Daniell: Text-book of the Principles of Physics, p. 217.

[4] Richter: Lehrbuch der Anorganischen Chemie, 1881, p. 284.

[5] Cf. Specific and Atomic Heats, Miller's Elements of Chemistry, 1867, Part I., p. 313; also von Richter, op. cit., p. 163.

[6] Incidentally this extreme diversity of form of the same element favours the view that the atom is a complex aggregate, and not a simple unit; and one may here hazard the remark that there is no more necessary contradiction between the view of complexity of the atom and the fact that this aggregate behaves as an undecomposable substance, entering into and passing out of combination without ever losing its identity, than there is between Dalton's theory and the theory of compound radicals.

begin with, the elements potassium and sodium in the free state have many features in common; this being so, it will be hardly surprising that when they enter into combination each with the same element or group the resulting compounds will have features in common—e.g., that the oxides, bromides, and iodides should resemble each other. For in these cases it is, in fact, a combination of similars; the potassium is a kind of sodium, and because of this the oxides are of a kind, just in the same way that the oxides of two separate portions of potassium are identical because of the identity of the two portions of potassium. Yet, when it is said that the salts of potassium resemble those of sodium this and no more is meant—viz., that the compounds of these elements with the same element or group are similar. The evidence needed is the resemblance of compounds of sodium and potassium with *dissimilar* elements or groups, and, again, is this evidence forthcoming?

To go no further, one would ask at this stage: Is one justified on chemical grounds in demanding that in a series of compounds, say the bromides, the uniform presence of the element bromine shall always reveal itself by a uniformity of action. Assuredly not, but, on the contrary, if such uniformity is obtained one should be very thankful. This, then, is the first stage arrived at—viz., that chemistry does not promise that the incorporation of a constant element in a series of compounds shall produce a likeness between the members of the series *so long as the compounds maintain their integrity*. There is, however, one way in which we may reasonably expect that an element should be pharmacologically traceable through a series of compounds. This is when each compound of the series undergoes more or less decomposition within the tissues and in each case yields a constant among the products. For example, suppose that a series of soluble salts of iron is administered; in each case there is the likelihood of the formation by double decomposition of a compound of iron with albumen, an albuminate. Clearly similarity of action from such a series will be expected. In like manner if a series of bromides act by virtue of more or less decomposition with development of free bromine and subsequent reconstruction of other compounds with bromine it will be expected that the series will show similarity of action because the bromine will almost certainly reconstruct the same compounds, since the organism will present on an average the same conditions. (It has been maintained by some that bromides act in this way). But it will be observed that such constancy of action will result from a decomposition of each member of a series with reconstruction of a constant, and that it does not belong to the series of compounds in their integrity. Of course even on this view a series of compounds will manifest dissimilarity as well, because of the inconstants liberated in the decomposition. Similarity in pharmacological action of the kind just described is the counterpart of the chemical similarity which a series of compounds exhibit when exposed to one and the same reagent—e.g., the uniform precipitate which lead salts form with hydric sulphide.

The question of molecular structure next presents itself. It has been seen that, on the theory of elemental complexity, this question may arise even when the molecule consists of but two elements; but it is known that it must arise when three or more elements compose the molecule, even though the elements be severely simple, and it must now be asked whether on chemical grounds one has a right to expect that uniformity of structure shall be answered to by uniformity of character and behaviour. The reply is on the whole more satisfactory—viz., that one may reasonably look for a certain degree of uniformity—for, in the first place, if one take such a natural group as the ethylic alcohol series, it is found that the elements composing each term are the same—in each case it is carbon and hydrogen and oxygen, and these elements alone, which are present; and, in the next place, each member in the series differs from its adjacent members by a constant difference, which permits even of numerical expression. There are therefore both constancy in the quality of the constituents and a constant quantitative difference between the members of the series, which form, indeed, an arithmetical progression. This is a bare statement of fact. It is not surprising, therefore, that a group of which this can be said should form a natural group possessed of many features in common. The like will hold of the other homologous series of the polyatomic alcohols and to a large extent also of such natural groupings as the carbohydrates (glucoses, saccharoses, amyloses) and the alkaloids &c. In the latter, however, more especially among the oxygenised members, the complexity of the molecule is assuming alarming proportions. One may expect then a certain degree of uniformity in these natural groups, especially in the simpler series and among the simpler terms of each series; but, inasmuch as it is known that in the case of the more complex molecules it is possible to group the atoms of one molecule in more than one way and yet satisfy the atomic values of each element, one will be prepared for the occurrence of bodies containing the same number of atoms of the same elements in each molecule, yet differing more or less in their properties from each other—i.e., one will be prepared for the fact of isomerism and the occurrence of primary, secondary, and tertiary compounds with corresponding differences of characters. The number of possible isomerides belonging to a given empirical formula is a problem in permutations, and obviously is dependent on the molecular complexity. "Three atoms of carbon and eight similar monovalent atoms can only be arranged in one manner, but if the eight monovalent atoms are all different then no less than 280 forms of combination are possible. It is clear that the atomic linking in a given compound can only be determined by calculation in the very simplest cases." (Lothar Meyer.[7]) These remarks refer to the number of isomerides theoretically possible.[8] Unfortunately a further complexity is possible, and chemists describe under the heading of polymerism an association of two or more molecules to form one compound molecule, as it were. What the nature of this association is has yet to be learned, but it may carry with it a very marked change of properties, and therefore it may probably be assumed that a correspondingly marked change in molecular arrangement will also obtain; this change is inadequately represented by the chemical symbolism $(—)_n$. Molecular structure, therefore, may show variations both isomeric and polymeric, and deviations from a certain degree of uniformity of behaviour will follow on these same variations. But a complexity to the n^{th} power will result when the region of chemical substitutions is entered, when, for instance, in a complex organic molecule one replaces a single element—e.g., hydrogen—by a compound radicle—e.g., C_2H_5, or C_3H_7, or C_6H_5, &c. In each such case the question which must arise in connexion with uniformity of behaviour will be whether the difference introduced by the substitution shall outbalance the uniformity of plan still present. This question will arise in each case and will have probably to be answered in each case on its own merits—viz., on the one hand, the relative stability of the type of structure, and, on the other, the relative disturbing force of the substitution, and, of course, this will hold whether a compound radicle or a single element is introduced, as, for instance, when one introduces the elements arsenic or antimony into organic molecules. In such cases it is very improbable that any guiding rule will be forthcoming which shall enable one to make the step from chemical constitution to therapeutic action. This difficulty may be expressed in another way. Supposing one takes a molecule from the fatty series of compounds and substitutes for, say, an atom of hydrogen the monovalent grouping (C_6H_5), how is one to regard this chemically? As belonging to the aromatic or to the fatty series? Yet if one is to accept the prevailing teaching that to the aromatic and fatty series belong different therapeutic tendencies, it is obvious that it is very important that one should know how to answer this question if any forecast of the mode of action is to be given. On this second question, then—the influence of molecular structure—it may probably be said that chemistry teaches that a certain degree of uniformity of action will attend uniformity of plan of structure, provided that one is dealing with the simpler terms of a series, but that the introduction of substitutions imperils this uniformity of action and may completely annul it, and that such deviations from the original plan as obtain in cases of isomerism and polymerism may also cause marked alteration in the mode of action. This part of the problem will require for completion that account should be taken of certain issues which affect the whole subject of chemical action. These are, firstly, that one must always bear in mind when any substance is brought to bear on the living body that this same substance comes into relation

[7] Op. cit., p. 80.

[8] Geometrical isomerism, according to the views of Van t'Hoff and Le Bel, adds to the number of possible isomerides, for it shows that by a different arrangement in space of the atoms of a molecule more combinations are possible than the graphic formula with all its potentiality can evolve. The theory of geometrical isomerism has been required by the facts of optical isomerism. Outlines of Theoretical Chemistry, Lothar Meyer, pp. 99 et seq.

with an arbitrary set of physical conditions—e.g., a definite temperature, a certain degree of humidity, &c. These conditions arbitrarily set the limit to the sphere of influence of the substance under examination, and according as they do or do not favour its action it will be accepted or rejected. In this way a melting point or a solubility may determine the verdict active or inert, no matter what the kinship may be which the chemist has demonstrated between the substances in question. And, secondly, that every substance brought to bear on the living organism enters a vortex of chemical actions which constitute the metabolism of the body and which are arbitrary. Such substance or substances may or may not take part in this chemistry, and again the classification will have to be an arbitrary one, and it may draw the dividing line between the nearest of kin. We would illustrate another difficulty—e.g., let it be supposed that two chemically allied substances are being compared, and that the one dissolving and circulating and influencing the tissues escapes from the body as such, unaltered, whilst the other, after admission, suffers decomposition in the tissues and escapes variously combined; it will be clear that there will be no justification in drawing any conclusions as to a similarity or dissimilarity in the structure of these two substances from their pharmacological action, because the one body will have ceased to be that body in its passage through the tissues. To take a hypothetical case, suppose that the actions of chloral hydrate and of chloroform are being compared, and that the former should suffer decomposition within the tissues and yield chloroform, and, indeed, act by virtue of this chloroform, one clearly could not point to the pharmacological action as bearing out the chemical relationship between chloral hydrate and chloroform, for the experiment would have only demonstrated that chloroform acted like chloroform. (It is not maintained that this is what happens in the case of these two bodies, for the evidence is to some extent against it.) Or, to take another example, let it be supposed that the actions of citrate and of carbonate of potassium are being compared. This also will be futile, for the citrate will not retain its identity, but by oxidation become converted into carbonate. It must be clearly understood that neither in this nor in the preceding hypothetical case is it maintained that the action of the citrate or chloral hydrate is absolutely identical with that of the bodies into which they are converted, for in the one class of cases the active elements, ready made, are administered, and in the other these active elements are manufactured within the tissues. The conversion in each case, whatever it may mean chemically or physically, will constitute the difference in action between the two classes of bodies, and it may, of course, be important or insignificant. This is, perhaps, still better illustrated by the group of the acids. One is accustomed to contrast the action of these with that of the alkalies, and yet, as a matter of fact, nothing is known of the action of the acids as such within the substance of the body, for they never circulate as acids, since life is impossible on these terms. For all this, the action of the acids is wholly different from that of the salts, potassic, sodic, &c., into which they are converted, and the difference lies in this, that the act of conversion has been at the expense of the tissues—that there has been a withdrawal of alkali from the body.

These considerations lead up to the question, How do the materia medica exist within the organism? The answer to this question is very far fom being formulated as yet. Unquestionably some substances may pass through the tissues in the particulate form—e.g., fine particles of carbon and other finely divided insoluble substances. Such will exert physical properties, if any, for in respect of chemical powers each travels *incognito*. Other substances, freely soluble and of high diffusive power, will mix freely with the fluids and solids of the organism. Many of those compounds taken from the class of the crystalloids will retain the comparatively quick movements belonging to the molecules of this class and they will pass freely into and out of the tissues; yet others, and these will constitute a large class, will assume the colloid form, which, as long since suggested by Graham, seems specially adapted to meet the needs of the organism, on account of the instability of the molecules, their proneness to change and their peculiar relations to water. These bodies, unstable and ever changing, are sluggish in their physical characters; they dissolve and diffuse very slowly. It is more than likely that the salts of the heavy metals circulate in some such form, for one knows the affinity of these bases for albumen and that outside the body they readily form albuminates. If formed these compounds somehow undergo solution and circulate through the tissues, probably still as albuminates and in the colloidal form. Once in solution, however, whether as crystalloids or colloids, one is unable to say how the compounds administered comport themselves, whether, for example, there is a constant interchange of bases and acids between the several salts in solution, or whether each pair, acid and base, keeps the original arrangement at the time of its solution.

An endeavour must now be made to make good these hints at the complexity of the subject by actual reference to cases in point. This is the third part—the therapeutic aspect of the problem. A very convenient series of simple compounds is to be found in the inorganic bromides; from them the following list is taken:—

Compounds.	Molecular weights.	Weights containing equal quantities of bromine.
Hydrogen bromide, HBr	80+1=81	81
Lithium bromide, LiBr	80+7=87	87
Ammonium bromide, NH_4Br	80+18=98	98
Sodium bromide, NaBr (? NaBr+4 Aq)	80+23=103 (? 175)	103 (? 175)
Potassium bromide, KBr	80+39=119	119
Calcium bromide, $CaBr_2$	$(80)^2$+40=200	100
Rubidium bromide, RbBr	80+85=165	165
Strontium bromide, $SrBr_2$ (? $SrBr_2$+6 Aq)	$(80)^2$+87=247) (? 355)	123·5 (? 177·5)
Cæsium bromide, CsBr	80+132=212	212
Gold bromide, $AuBr_3$ (AuBr)	$(80)^3$+196=436 (80+196=276)	145·3 (276)

In the above table the compounds are arranged from above downwards in ascending order of atomic weight of the basic element. In the second column the molecular weights are given, and in the third the weights which correspond to a constant weight of bromine, 80; these last numbers agree with the molecular weights excepting where the molecule contains two or more atoms of bromine, in which case they are found by dividing the molecular weight by the number of atoms of bromine. The molecular weights are calculated for anhydrous salts, though some of the above salts form *also* hydrated salts—e.g., NaBr+4 Aq and $SrBr_2$+6 Aq. The figures in parentheses appended in these two instances represent the hydrated salts. The bromide of gold is represented as $AuBr_3$, though two other salts of bromine are formed, including the monobromide. It is Merck who suggests that the salt used by Goubert must have been the tribromide. Now, in the first place, is there traceable throughout these bromides a similarity of action due to the constant, bromine, and in the next place is the uniformity of action proportional to the amount of bromine in the salt? The answer to the first question must presumably be in the affirmative, for it is claimed for the entire list that the members are sedative, as shown by their power to lessen motor and mental excitement. But is the sedative action proportional to the amount of bromine administered? The answer is less distinct. If equal weights of the bromides are given, then on the bromine-influence theory the order of efficiency should be: lithium most efficient, and then, in descending order, ammonium, sodium, potassium, rubidium, and cæsium. These six have been selected for comparison because the bases are all univalent and belong to one natural group. The first three—lithium, ammonium, and sodium—do not differ greatly in molecular weight, therefore one should be prepared for an apparent equivalence, but the potassium salt shows a considerable advance in molecular weight, 119 as against 87, or as 100 : 73, therefore the potassium salt should only possess about three-quarters the power of the lithium salt, whilst the rubidium salt should be just about half the strength and the cæsium salt of little more than one-third the strength. Calcium and strontium, two adjacent members of a natural group, form bromides which do not differ very greatly in their molecular weights—approximately they are as 5 to 6; therefore one could not look for much difference in their dosage. Hydrobromic acid should be more efficient than potassium bromide, as 3 to 2. Gold bromide, on the other hand, should be a little less efficient than the potassium salt if one considers

the tribromide, and less than half as efficient if one takes the monobromide.

If now one passes to practical therapeutics it is noted that the bromides of ammonium, sodium, and potassium are given in about the same doses, and the lithium salt in doses about the same or rather smaller. Various opinions are held as to the relative efficacy of these salts, some giving the sodium or ammonium salt the preference over potassium bromide, others reversing this order, whilst some place lithium bromide as the most active. Nothing really definite is known, in spite of Laufenauer's statement that it is "recognised" that potassium bromide acts much more energetically than sodium bromide, and sodium bromide than the lithium salt.[9] As to cæsium and rubidium clinical evidence is still awaited, but the latter has been tried to a certain extent, and according to Laufenauer it does not fall short of, but surpasses in activity, the potassium salt. This observer advances the view that the bromides of the alkali metals increase in activity as the positivity and atomic weight of the base increase. It cannot be said, however, that he establishes this view on either extensive or convincing experimental evidence, and the promised communications on the value of cæsium bromide are still looked forward to. Hydrobromic acid has never seriously competed with the ordinary bromides, and it cannot be quantitatively compared with them. Bromide of gold has of late been recommended as a sedative, in particular by Goubert.[10] He has been followed and to some extent confirmed by some Russian observers, Drs. Danillo, Shcherbak, and others. The interest attaching to this salt, which Merck[11] declares to be the tribromide, lies in the smallness of the doses said to be efficient; these are from one-twentieth to one-tenth of a grain for children, and from one-eighth to one-fifth of a grain for adults (Goubert); moreover, these doses represent the quantities given *pro die*. Shcherbak, who experimented upon animals rendered epileptic, puts the dose higher; but even he gives the strength of the bromide of gold as compared with that of the other bromides in the ratio of 10 to 1. But on the bromine theory the gold salt ought to be less active than the potassium salt. Since Goubert's investigations the preparation of the double bromides of gold and potassium suggested by Merck[12] as more suitable than the pure bromide of gold, because more stable, has been tried by Jankura and Laufenauer. The formula of this salt is $AuBr_3, KBr + 2H_2O$, and its molecular weight 591. The molecule contains four atoms of bromine, and therefore to get the weight corresponding to the constant, 80, of bromine one must divide by 4; this gives 148. Accordingly the salt should be rather less effective than potassium bromide, yet the dose employed subcutaneously (the method found most efficient) averaged 2 centigrammes = rather under one-third of a grain.

Dr. Julius Donath has recently attacked this question of the action of bromides from another standpoint. He regards the evidence as being tolerably conclusive that the sedative action of these bodies belongs to the bromine, and therefore very ingeniously concludes that if he could introduce an organic bromide, the base of which would be burnt in the organism, he would not only get rid of the disturbing element, the base, but by liberating the bromine in the nascent state would bring it to bear in its most active form. With this in view he made trial of ethylene bromide, $C_2H_4Br_2$, in epilepsy. His results, though not conclusive, especially as to the relative value of this and other bromides, are certainly encouraging.[13] The doses, however, which he found efficient were for adults only from one and a half to three grains twice or thrice daily—i.e., about one-tenth the magnitude of the ordinary doses of potassium bromide. Now if one compares together the weights of these two bromides, which contain an equal weight of bromine, the numbers 119 (KBr) and 94 ($C_2H_4Br_2 \div 2$) are obtained, and accordingly one should expect ethylene bromide to take rank between ammonium and lithium bromides as somewhat more active than the potassium salt—this, of course, on the bromine theory. But Donath's dosage makes the organic salt ten times as powerful. Obviously there is no proportion here between theory and fact, unless one is to credit the nascent state with the disproportion.

From my point of view it does not matter whether the grouping C_2H_4 is broken up or not—all that is of any moment is that the activity of the salt is not to be calculated from the quantity of bromine contained in it. Further confirmation of the results given above must be awaited, but meanwhile it may be said that whilst the bromides in general appear to demonstrate a qualitative likeness, which one is justified in ascribing to the constant bromine, they do not at present manifest any quantitative likeness such as one might reasonably expect, for it must be clear that if a constant reveals itself qualitatively it ought also to show itself quantitatively.

I will now examine the therapeutic evidence in favour of the effect of molecular structure. Stated broadly, it must be admitted that there is some relation—the long list of hypnotics and of antipyretics recently introduced give evidence of this; but one meets with very puzzling exceptions. Let me take the small group of hypnotics—sulphonal, trional, tetronal—all of which are built up, so we are taught, on the type of marsh gas, methane. These might be better named, to show their supposed structural relations, by substituting the word "dional" for "sulphonal," for there are respectively two, three, and four groupings of ethyl in the molecules. The extra groupings in trional and tetronal are not, however, additions to the molecule, but substitutions for methyl radicles, and, with the exception of these substitutions, the molecules are exactly similar. Kast and Baumann propounded the view that the ethyl groupings dominated the action of the molecules; they based this upon experiments on animals, and they gave the order of efficiency as tetronal, having most action, then trional, then sulphonal. Barth and Rumpel, however, were not able to confirm this from clinical results, and more recently Schultze,[14] in a careful series of trials, has also been unable to confirm the statements of Kast and Baumann. According to him, trional is, on the whole, more efficient than tetronal, and may rank as equal to, if not in some respects superior to, sulphonal; whereas, then, in the case of this small group general uniformity of structure is corresponded to by likeness of action, one is unable as yet to recognise any proportion between quantitative molecular differences (substitutional) and therapeutic value. I shall only be expressing the fact in this case if I say that type of structure predominates over substitutional differences. It will be noted here, it is true, that the interchanging radicles are from the same series. Substitutional differences may, however, play the most important part—thus, e.g., the introduction of these very groups, methyl, ethyl, which it has just been seen are interchanged with so little effect, may completely reverse the activities of the molecule. Brown and Fraser have shown this in the case of the alkaloids strychnine, brucine, and thebaine, which, when converted into methyl derivatives by substitution, exchange their convulsant action for paralytic, curare-like effects;[15] the like holds good for the ethyl derivatives of strychnine and brucine—they are paralysants. What, however, is most astonishing is the effect of introducing these same groups into the morphine molecule, with formation of the codeines, a class of bodies which appear to have acquired a relatively convulsant action. Further, methyl coniine is said to differ from coniine in that its action falls upon spinal cord and peripheral nerves instead of only on the nerves. It cannot be said that these teachings are altogether encouraging from the point of view of the relation between molecular structure and therapeutic action.

Of the effect of the simple subtraction of elements without further decomposition there exist examples in aldehyde and apomorphine; these are derivatives respectively from alcohol and morphine by the withdrawal of the elements H_2 and H_2O. But whereas in the case of the simpler molecule of alcohol the abstraction does not appear to involve any serious alteration in function, in the case of the more complex molecule the change in structure causes changes in function, which

[9] Therapeutische Monatshefte, 1889, p. 348: Ueber die Therapeutische Wirkung des Rubidium-Ammonium-bromids. Weir Mitchell, on the other hand, considers the lithium salt the most active of this group.

[10] Vide THE LANCET, vol. i. 1890, p. 869; also Journal de Médecine de Bruxelles, 1889. I have not been able to consult Goubert's Nouveau Traitement de l'Épilepsie, Paris, 1889.

[11] Merck's Jahresbericht, 1891.

[12] Ibid., 1891 and 1893.

[13] Therapeutische Monatshefte, June, 1891.

[14] Ibid., October, 1891.

[15] Recent investigations into the structure of the strychnine molecule by Dr. Tafel throw doubt upon the nature of the salts worked with by Brown and Fraser—i.e., as true methyl substitution products. Dr. Tafel considers that true methyl strychnine acts like strychnine, but that it is readily converted into a methyl strychnium salt in the presence of acids and then produces the effects described by Brown and Fraser (cf. Pharmaceutical Journal, Aug. 1st, 1891). One must be content to leave this matter for further investigation, but meanwhile it illustrates well the difficulty of following the changes in complex molecules and the pitfalls which beset the path of the pharmacologist.

seem quite disproportionate. Of course, the real disproportion is between the actual molecular rearrangement involved by the withdrawal of the molecule of water and the symbolic representation of the same.

What, it may be asked, are the changes involved in the close association of like molecules, which produces polymeric derivatives? As examples of such there are aldehyde and paraldehyde—the former causing powerful excitement of the brain before it stupefies, the latter producing sleep without excitement and taking rank as one of the best and safest, if not most agreeable, hypnotics.

Finally, I will revert to the question of the structure of molecules which include two or more radicles from different series. One of the recently introduced hypnotics, hypnone, is generally described as methyl-phenyl-ketone—i.e., as a body belonging to the fatty group in which the carbon atoms occur in chain series; but it is clear that one may also theoretically regard it as a body belonging to the aromatic series in which one atom of hydrogen is replaced by the monovalent grouping $CO(CH_3)$, the equivalent of $CO(H)$. But in the aromatic series the carbon atoms appear in closed rings, and one generally attaches to this structure different tendencies from those which belong to the chain series of carbon compounds. How is a hybrid structure such as this to help to any inference as to its potencies? As a matter of experience it appears that the soporific powers attributed to the chain structure prevail. In the substance hypnal, which is said to be a compound of chloral with antipyrin, with definite chemical formula—in fact, monochloral antipyrin—the same problem confronts one; of this body it is learned that the properties of the chloral contingent predominate, the compound being hypnotic and analgesic. But antipyrin itself possesses analgesic powers, so it is possible that the compound borrows from both constituents and to some extent behaves as a mixture. Further, the substance euphorine, phenyl-urethane, admits of a double representation and may be regarded either as an aromatic body or as a derivative of the fatty series—therefore, either as $C_6H_5\left(CO\begin{cases}C_2H_5O\\NH\end{cases}\right)$ or as $CO\begin{cases}C_2H_5O\\NH(C_6H_5).\end{cases}$ Theory would leave the choice an open one; experience has declared the compound to be possessed chiefly of antipyretic and antiseptic powers.

These examples may suffice to at least point out the difficulties which surround the subject and perhaps also to suggest whether one can regard the rational formulæ of the chemist as altogether rational from a therapeutic point of view.

In conclusion, I would add that these remarks are offered as a protest against the tendency now prevalent to exploit the rational formula of the chemist for pharmacological purposes. To try to connect the ascertained facts of chemical structure and therapeutic action is well, and this must always be the aim to be achieved; but the subject bristles with difficulties, and to build or theorise rashly in the present state of knowledge is nothing less than scientific speculation of the worst possible kind—it is the unscientific use of the imagination.

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ON SOME FATAL AFTER-EFFECTS OF CHLOROFORM ON CHILDREN.

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(Continued from p. 197.)

ALTHOUGH the symptoms in all but two of these cases strongly resemble each other in their peculiarly cerebral character, and although there was one factor common to all—namely, that an operation more or less severe and lengthy had been performed under chloroform—yet it is by no means easy to attribute all these deaths to a common cause. The possible causes of death may have been: (1) shock with excitement, (2) carbolic acid poisoning (in all but two cases), (3) iodoform poisoning in one case and mercurial poisoning in two, (4) pre-existing pathological conditions, and (5) the remote effects of chloroform. Shock with excitement seems to be the first and most natural explanation of these unhappy results of operations. It is no heavy strain on the imagination to suppose that the combined effects of fright, chloroform, and a lengthy and severe operation may produce a reactionary hyper-functional activity of the sensitive cerebral centres in a child, and that this condition may in itself lead to fatal exhaustion. It must be granted that the symptoms strongly resemble those of shock with excitement to which Travers first drew attention. Yet one is loth to accept a merely theoretical explanation without first excluding other causes of the symptoms which may seem to be more obvious and simple. In the first place sapræmia may be excluded. The operations were all performed under the strictest antiseptic precautions and by surgeons imbued with antiseptic principles. The symptoms in no way suggest that any of these deaths were due to septic invasion. How far were the operations themselves calculated to produce shock? With the exception of Case 6, in which secondary hæmorrhage occurred, the operations were not attended by any considerable loss of blood. The symptoms in this exceptional case did not differ from those of the rest, and are, therefore, not attributable to the hæmorrhage. The division of a few tendons, as in Case 1, does not seem to be an operation which might be expected to produce much shock, neither were there any signs of shock present at the close of the operation. Osteotomy is perhaps one of the operations most commonly performed at hospitals for children. As an operation of expediency it would never have acquired its popularity were not fatal results extremely rare. Still it must be remembered that the operation was severe and lengthy in both of the cases of osteotomy. In Case 2 the femur, tibia, and fibula were all divided, and much manipulation was necessary in order to get the bones into position. At the close of the operation the pulse was weak and irregular, and the symptoms of excitement commenced as soon as consciousness returned after the anæsthesia. In Case 4, although both femora were broken, yet there was no collapse at the close of the operation, and the symptoms of excitement did not appear till some hours had elapsed. Aspiration with irrigation of a spinal abscess is not considered to be a dangerous operation, nor is it as a rule a lengthy one involving the absorption of large quantities of chloroform; yet four of the ten cases were those of spinal abscess. Of these, Cases 5 and 9 showed no signs of collapse at the time of the operation; symptoms of danger did not appear until three and eleven hours respectively had elapsed, whilst much collapse was present at the close of the operation in Cases 8 and 10. In Case 8 the symptoms of excitement lasted for no less than six days. In Case 10 it is interesting to note that signs of collapse, as indicated by the temperature (95·8° F.), at the close of the operation were more marked than in any of the other cases; yet this was the only case which recovered. It would thus appear that the amount of collapse produced directly by the operation is no guide as to the possible events which may ensue; but, as is well known, symptoms of shock are often not apparent until some hours after the injury has been received, so the delay of symptoms in these cases does not prove that they were not dependent on the effects of the operation itself. Had signs of surgical shock appeared during the operation in these cases it would have been easy to attribute the fatal symptoms to intense reaction following intense shock produced at the time of the operation; but shock was not intense during the operations in these cases. Nor have I ever observed intense reaction follow the intense shock which sometimes brings children to death's door during an operation. As regards the remaining three of the ten cases recorded, Case 6 (excision of knee), Case 3 (radical cure of hydrocele), and Case 7 (supra-pubic lithotomy) all exhibited signs of considerable collapse at the close of the operations; yet the amount of collapse was not greater than might be expected to occur after such lengthy and severe operations. Such operations are of common occurrence at our hospitals. No surgeon would hesitate to perform them on the ground that they are naturally productive of dangerous shock. It does not seem reasonable, therefore, to conclude that these deaths were due solely and simply to the severity of the operation. At the same time it would be futile to argue that the operations had no share in the causation of death.

The part played by carbolic acid in the causation of these deaths must next be considered. Pads soaked in a 1 in 20 solution of carbolic acid were used to purify the skin preparatory to the operation in all but Cases 9 and 10. In these two cases it was only used in the form of "strong mixture," with which the parts to be operated upon were scrubbed after the patient had been put under chloroform. It was used as a dressing in Cases 1, 3, 4, 5, 7, and 8. Carboluria was

noted in Cases 3 and 4. In Case 8 it was present for one day after the operation. In Case 2 it was present before the operation but not after. In Cases 1, 5, 9 and 10 carboluria was absent. As regards other urinary conditions, in Cases 1 and 8 there was retention of urine, and albumen was present after the operation. In Cases 6 and 7 albumen was present before the operation, but no subsequent mention is made of the urine; and death occurred within ten and twelve hours of the operations respectively. In Case 10 albuminuria and carboluria were absent, but there was an excess of uric acid after the operation. On the assumption that the symptoms might be due to carbolic acid poisoning, the dressings were changed for salicylic wool in Case 1 and for sal alembroth in Case 3, and other counteracting measures were taken without any improvement in the symptoms. The carbolic dressings when used in the other cases were not changed. Symptoms supposed to be due to poisoning by the external application of carbolic acid have been described ever since the early days of Listerism. Litton-Forbes[1] says that the application of carbolic dressings may be followed by rapid sinking or by a more insidious form of poisoning in which the temperature rises, with nausea, giddiness, loss of appetite, clonic spasms and great prostration, ending in coma and death. The symptoms, he believes, if observed in time, may be checked by changing the dressings. Bantock[2] says that acute nephritis with hyperpyrexia and suppression of urine may follow Listerian surgery. Agostini[3] records a case in which a perinephritic abscess was washed out with a 1 per cent. solution of carbolic lotion. This was followed by remittent fever lasting for more than a week, in which the temperature rose to 102° or 103° at night. When the dressings were changed for salicylic wool the temperature fell to 97° in thirty-six hours and no further bad symptoms occurred. "A long time after it was stated that the urine was dark olive-green in colour when the symptoms were at their worst." Küster[4] mentioned four fatal cases out of five instances of poisoning from the use of carbolic acid in surgery. In one of the fatal cases sudden death followed a second irrigation of the bladder with carbolic lotion. Another was that of a child who died unexpectedly on the day following excision of the hip. Olshausen mentions a case in which a ruptured uterine cervix was washed once with a strong solution of carbolic acid. This was followed by loss of consciousness, mydriasis, and twitching, without alteration in the heart or respiration. The symptoms all disappeared in three hours, but death soon followed. Warren[5] draws attention to the diminution of sulphates in the urine of patients suffering from carbolic acid poisoning. Charteris[6] of Glasgow says: "In human beings who have been poisoned by carbolic acid convulsions do not ensue; those poisoned by large doses sink into a comatose condition, with abolition of sensory and reflex movements, stertorous breathing and suppression of the urine. If the poisoning be due to absorption of the acid from external application, the urine is not suppressed, but has a dark colour, and on being allowed to stand becomes black. The colour is due to hydrochinon, a derivative of phenol. When carbolic acid is purified this derivative and doubtless many other impurities are taken away." He attributes the untoward results accruing from the use of carbolic acid to the presence of impurities in the preparation. The symptoms, wild screaming delirium, restlessness, sleeplessness, and incessant vomiting of peculiar character, which were so prominent in the fatal cases occurring at Paddington-green Children's Hospital, are not therefore fully in accord with the view that the deaths were due to carbolic acid poisoning. Neither can the presence of hydrochinon in the urine be conclusive evidence that the children were killed by carbolic acid alone. In the days when carbolic lotion was used with far greater freedom than it is now, the urine following an operation invariably became dark-green or black on standing for some days after the dressing had been applied; yet this condition seemed in an infinite number of cases to be quite unattended by other symptoms and in itself was regarded as of no consequence. Moreover, the course of the fatal cases now under consideration seemed to be in no way modified by either the presence or absence of carboluria. For instance, in Case 1 the urine was neither dark on passing nor on being allowed to stand, and the sulphates were not diminished. Carboluria was also absent in Case 5; yet the symptoms were in all respects the same as those in Cases 3 and 4, in both of which carboluria was present. The strongest evidence in favour of carbolic acid poisoning as the cause of the symptoms is afforded by Case 3. Here the child vomited seven times during the night preceding the operation, five hours after carbolic cloths had been applied to the abdomen and hydrocele for two hours. It is not stated whether carboluria was present before the operation, but as other symptoms of carbolic acid poisoning were absent at this time and the child seemed to be perfectly well on the morning of the operation the evidence even in this case does not justify the conclusion that death was due to carbolic acid poisoning.

Cases 8, 9, and 10 require special consideration because the questions of iodoform poisoning in Case 8 and of mercurial poisoning in Cases 9 and 10 arise. The symptoms in Case 8 only differed from those of other cases in their unusually long duration (six days). On the sixth day, it being thought that iodoform poisoning might be the cause of the symptoms, the abscess was evacuated. Iodoform-smelling pus was withdrawn, and the cavity was irrigated with boracic lotion, but no relief followed, and the child died a few hours later. The symptoms of iodoform poisoning, according to Murrell,[7] are drowsiness alternating with delirium and periods of excitement, spasmodic contractions of facial muscles, diplopia, intense headache, and sense of impending death. Deep inspirations are drawn, alternating with periods of apnœa, lasting for about half a minute. He says, moreover, that "the symptoms occur most frequently when iodoform is used in conjunction with carbolic acid dressing, the reason given being that carbolic acid irritates the kidneys and renders them less liable to eliminate the iodine."[8] Carboluria in Case 8 was present for one day after the operation, and two days later there was a trace of albumen in the urine—which was retained, though not suppressed. In most cases where iodoform has been thus injected iodine can speedily be detected in the urine, but in this case its presence does not appear to have been sought; so it is possible that Dr. Murrell's explanation may be correct in this instance. Yet only two drachms of a 10 per cent. solution of iodoform in glycerine were injected, and far larger amounts have often been employed in similar cases without producing ill-effects. Moreover, the symptoms, except that of delirium, do not resemble those of iodoform poisoning. This patient, like most of the others, far from being drowsy, hardly slept at all except for a few moments at a time, nor was headache present, as far as could be judged, in this or any of the other cases. Vomiting, so prominent a symptom in all these patients, is not a feature in iodoform poisoning. Lastly, the symptoms were the same as in other cases in which iodoform was not used at all. In Cases 9 and 10 the abscesses were aspirated, and their cavities, after being scraped, were washed out with a 1 in 4000 solution of perchloride of mercury. Carbolic acid was only used in the form of strong mixture, in order to cleanse the parts immediately prior to making the necessary incisions. In Case 9 death took place thirteen hours after the operation, and symptoms of danger only appeared when eleven hours and a half had elapsed. The symptoms were unlike those of most of the other cases. Vomiting occurred once only and was slight. There was no delirium or screaming. The child simply became cold and pulseless, and died. Mr. Watson Cheyne, in speaking of this case, ascribed the death either to the effects of irritation of the sympathetic nerve, caused by scraping the abscess walls, or to fatty embolism.[9] But, although the effects of shock may often be delayed, it seems to be most unlikely that the delay should last for eleven hours and a half, during which the patient appeared to be perfectly well. Nor in this case is it easy to see how fatty embolism could have been produced in the manner suggested. The symptoms, moreover, were those of collapse and not of fatty embolism. In some of the other cases, however, the possibility of fatty embolism cannot be ignored, and to these further reference will be made. The supposition that the fatal result in Case 9 was due to the absorption of mercury through the scraped walls of the abscess is rendered likely by the effects of the precisely similar operative treatment adopted in Case 10. The symptoms here were marked collapse, vomiting, and restlessness, but no screaming or delirium. Twenty-four hours after the operation the temperature was 96°, and profuse hæmorrhagic diarrhœa commenced. The symptoms subsided in three days,

[1] London Medical Record, 1880, p. 173.
[2] Braithwaite's Retrospect, vol. i., 1882, p. 302.
[3] Gazetta degli Ospitali, Feb. 1st, 1880.
[4] Congress of the Society of German Surgeons, April, 1878.
[5] Medical Press, Jan. 11th, 1882.
[6] Brit. Med. Jour., vol. ii. 1892, p. 1424.
[7] What to do in Cases of Poisoning, p. 138.
[8] Ibid., p. 139.
[9] British Medical Association's meeting held at Nottingham, 1892.

and the child recovered. The absence of the cerebral disturbance, which was so marked in the other cases, serves to distinguish Cases 9 and 10 from the rest, whilst the symptoms present in Case 10, at all events, suggest mercurial poisoning, although salivation was absent. In Case 9 the mercury may have been suddenly absorbed in sufficient quantity to produce fatal collapse before other symptoms of poisoning had time to manifest themselves. In Case 10 it may have been absorbed more gradually; collapse and vomiting were marked from the first, but the purging did not commence until twenty-four hours had elapsed. It should be stated that the abscess cavities were in both cases wiped out with sponges after irrigation, but this is an incomplete mode of clearance. In midwifery practice it is customary to irrigate with warm boiled water after the use of corrosive sublimate, in order to avoid absorption of the latter, and it would, perhaps, be best to adopt this procedure in such cases as the present.

Cases 6 and 7 also call for special notice. In both instances screaming delirium, persistent vomiting, and restlessness were marked features. In both albumen was present in the urine at the time of operation. In both carbolic acid was freely used both before and during and, as a dressing, after the operation. In both death occurred within an unusually short space of time. The patients died in ten and twelve hours respectively after the operation. In Case 6 death was gradual; in Case 7 it was sudden. In Case 6 there was double pyelitis; in Case 7 the kidneys were described as being in the early stage of granular nephritis: there was marked congestion, and the capsules were adherent. It is impossible to disregard the renal condition which was present in these two cases. Both operations were of necessity, and no surgeon would decline to operate under the circumstances; yet it is possible that the renal conditions present before the operations may have accelerated death. At the same time, neither the symptoms nor the conditions of the kidneys justify the supposition that death was entirely due in the one case to pyelitis and in the other to nephritis.

The question whether these deaths can be attributed to the remote pathological effects of chloroform must next be considered. Casper[10] says: "It can no longer be doubted that there is such a thing as chronic poisoning by chloroform—that is, that the drug, when it does kill, does not always kill instantaneously, but that hours, days, or even weeks may elapse during which the person anæsthetised remains continuously under the influence of the poison to which he at length succumbs." Berend[11] gives several cases in which death followed the use of the anæsthetic during the ensuing night or within fifteen or forty-eight hours. One of them was that of a drunken painter, whose left scapula was excised by Langenbeck. The operation took three-quarters of an hour. Complete consciousness, motion, and sensation returned; in the evening vomiting suddenly occurred and recurred during the night on swallowing fluids. On the following morning the face was pale, the pulse was very small and frequent, and the vomiting continued. At 8 A.M. the pulse suddenly ceased, the movements of the heart could scarcely be felt, and the respiration was free and regular, yet the patient complained of oppression. An attempted venesection gave vent to a little watery, ink-coloured blood. He died a little after 8 A.M., seventeen hours after the operation. The chief post-mortem appearances were as follow. There was black watery blood, with air bubbles in the cardiac veins, in the branches of the pulmonary artery, and even in the larger veins of the extremities. The lungs were distended, pale, and anæmic. The heart was not distended, but both sides contained fluid blood, with black, feebly coagulated clots. The spleen was dense and firm, the liver was fatty, and the kidneys were pale and firm. The brain was peculiarly pale and here and there quite anæmic. Langenbeck remarked upon this case "that the fatal result of the operation could only be explained in two ways: (1) by supposing an over-excitement and subsequent exhaustion of the nervous system by the operation; (2) or by a fatal after-effect of the chloroform, a chronic chloroform poisoning." Another case is that of a railway labourer twenty-three years of age, who underwent amputation of the leg for disease of the tarsus. Dohlhoff performed the operation. It was fully twelve minutes before the patient became completely unconscious, he having been at first uproariously excited; subsequently he cried out at every cut. The amount of blood lost was not sufficient to produce exhaustion. Convulsive tremors of the stump occurred as the arteries were tied; the stump was five times during the day seized with tetanic convulsions. The last attack, accompanied by general spasms, proved fatal eight hours after the operation. The chief post-mortem phenomena were dark-coloured fluid blood containing air bubbles, flabby heart, and general anæmia except in the cerebrum and lungs, which were both congested. Casper also mentions a case of a woman who underwent amputation of her leg on account of a comminuted fracture. The operation was performed on Dec. 12th, and until her death, which took place on the 23rd of the same month, she never completely recovered her senses, which were lost during the inhalation. The post-mortem appearances in Berend's cases throw but little light on the cause of death. The only condition which was present in both is the peculiar appearance of the blood. Casper regarded this condition of the blood as always present in the bodies of those who had died from chloroform, but he admitted that it was not confined to those who had so perished. The condition which he described was only present in Case 2 of the Paddington-green Children's Hospital series.

Within recent years the pathological effects of long-continued administration of chloroform have been investigated by Ungar and Strassman, Thiem and Fischer,[12] and also by Ostertag,[13] Berlin. The results of chloroforming several animals for an hour or so at a time during a period of many days were thus summed up by Ostertag: (1) fatty degeneration of organs, especially fatty infiltration of the liver, and fatty metamorphosis of the cardiac and skeletal muscles, kidneys, and stomach; (2) these fatty changes result from the action of chloroform upon the blood (destruction of red corpuscles) and upon the tissue cells; (3) some individuals have a greater susceptibility to this action of chloroform and succumb at an earlier period to its effects; and (4) the fatal effect is due to cardiac paralysis, which may occasionally be accompanied by but slight anatomical lesions of the myocardium, and also to gradual carbonisation of the blood. Ungar and Strassman described similar fatty changes, without, however, appreciable alteration in the blood. These researches appear to prove that the result of long-continued chloroformisation is to produce fatty changes in the body generally, and of the liver in particular. It remains to be considered whether this was the cause of death in the cases at the Paddington-green Children's Hospital. The fact that the liver was found to be markedly fatty in no less than five of ten cases cannot be regarded as a mere coincidence. Of the other five cases, three died within thirteen hours of the operation. Of these three, two (Cases 6 and 7) showed renal conditions which may have accelerated death. The third (Case 9) may have died from mercurial poisoning, as has already been suggested. Of the remaining two, one recovered (Case 10), whilst as regards the other (Case 8) a necropsy was unfortunately not allowed. In all cases in which the liver was observed to be fatty the operation lasted certainly for not less than an hour, and death occurred in from sixteen to fifty-three hours after the operation. This seems to be an incredibly short time for such marked fatty changes to be produced by chloroform, and the question naturally arises, Were these conditions pre-existent? A fatty liver is common enough in children who have died from wasting diseases. After death from syphilitic marasmus, for instance, the liver cells are often found loaded with fat; but here the changes are associated with cirrhosis or gummatous conditions which were absent in the chloroform cases. In chronic phthisis, again, and in cases of long-standing tuberculous joint disease the liver is often fatty, but never to the extent present in at least three of the five cases of death after these operations under chloroform. The nutmeg liver of obstructive heart and lung diseases, although markedly fatty, differs altogether in appearance from that of the cases now under consideration. The patients in whom fatty livers were found suffered from rickets in two cases, and the remaining three from infantile paralysis, hydrocele, and ascites (chronic peritonitis), and psoas abscess. Rickets, far from being a wasting disease, is one which tends to the accumulation of fat. The condition generally described as "well nourished" is more apparent than real. Rickety children are often extremely fat, but they are also flabby and their muscular development is deficient. The tendency to put on fat is perhaps increased by the usual treatment, which consists in

[10] Forensic Medicine, vol. ii., p. 296. New Sydenham Society, 1882
[11] Cases of Death from Chloroform. Hanover, 1850.
[12] Deutsche Medicinische Zeitung, 1889, p. 1111.
[13] Pathologisches Institut, Virchow's Archiv, vol. cxviii., p. 2.

keeping them off their feet, whilst freely giving them cod-liver oil for months or even years. It would not, therefore, be surprising if more fat becomes stored in the liver in such cases than can possibly become oxidised. So, again, with the case of infantile paralysis. The child had never been able to stand or walk. The family cripple is naturally the family pet, and can hardly escape being overfed and fattened by cod-liver oil, until he may arrive at the condition of *foie gras*. An explanation on similar lines may be offered of the condition found in other cases. None of the children suffered from obstructive heart or lung disease or were markedly anæmic, or suffered from diseases which would naturally lead to deficient oxidation. A fatty liver was not demonstrated in any of the other three cases in which post-mortem examinations were held; but it does not therefore follow that the condition was absent. Frerichs[14] says: "Simple inspection is generally insufficient to determine the exact amount of fatty contents, since the liver may be in a tolerably advanced stage of fatty degeneration without seeming otherwise than normal, and, on the other hand, may be almost free from fat when its appearance would lead us to suppose the contrary." The microscope alone can determine whether or not the liver is fatty in some cases, and in these three cases the microscope was not used. At the same time, in three of the five cases in which a fatty liver was observed, the condition was so obvious as to attract attention the instant the abdomen was opened. In the other cases a fatty condition of the liver may have been unobserved owing to the presence of congestion. It is impossible to do more than surmise the existence of fatty liver during life, so one is unable to say whether the condition in these cases was pre-existent or not. No symptoms are known which do more than suggest its presence. Verneuil,[15] however, lays great stress on the occurrence of sudden profuse diarrhœa without apparent cause in patients suffering from large suppurations or in puerperal women. The size of the liver, as investigated during life, affords no evidence of its fatty condition. In two of these cases it was found to be larger than normal, whilst in a third it weighed only fourteen ounces and a half. The velvety or satin-like condition of the skin, usually regarded as presumptive evidence of fatty degeneration, was not observed in any of the cases. Verneuil[16] warns against operations in patients whose livers may be fatty. Symonds[17] of Oxford also gives a similar warning. Both these observers had met with cases of unexpected deaths after operations and had noted the existence of fatty livers. They did not, however, suggest that the condition might actually have been produced by chloroform. On the whole, it seems to be far more probable that the fatty condition of the liver was pre-existent to the operation rather than directly produced by the action of chloroform. It is incredible that such important changes can be produced by the inhalation of chloroform for the short space of an hour or less. Yet as there seems to be no reasonable doubt that the long-continued administration of chloroform will eventually produce such changes, it is also reasonable to suppose that chloroform, even when administered for a short space of time, may aggravate fatty conditions already present and may thus produce symptoms which under ordinary circumstances would not occur. The *modus operandi* remains to be discussed.

Will the condition of the liver account for the symptoms in these cases of death following operations? Seeing that the symptoms of fatty liver are practically unknown—and under other circumstances I am not aware that any deaths have ever been attributed to this condition alone—the question is a difficult one to decide. The symptoms in these cases are of pronounced cerebral type, and in this respect they resemble those of acute yellow atrophy of the liver or phosphorus poisoning. They differ from the symptoms of the latter in the absence of jaundice and of definite hæmorrhagic symptoms. Jaundice, though absent in these cases, is yet recognised as an occasional sequel to the administration of chloroform. Hæmorrhagic fluxes and purpura are not constant phenomena in either poisoning by phosphorus or in acute yellow atrophy of the liver. The chief point of distinction between the condition of the liver found in acute yellow atrophy and phosphorus poisoning, on the one hand, and in these cases, on the other, is that in the former complaints true fatty degeneration is present, whilst in the latter only extreme fatty infiltration was discovered. This distinction may perhaps account for the absence of jaundice and hæmorrhage in the latter cases; whilst the point in common is that in all cases the liver cells contain an enormous superabundance of fat which must be constantly entering the general circulation. No sufficient explanation of the marked cerebral symptoms in cases of death from acute yellow atrophy and phosphorus poisoning has yet been offered. Frerichs thought that they depended upon the presence of leucin and tyrosin in the blood, but experimenters have hitherto failed to verify this supposition. Rokitansky started the theory that the symptoms were really uræmic and depended on renal changes; but it seems to be an insuperable objection to this view that the character of the cerebral symptoms in acute yellow atrophy of the liver is not the same as in uræmia."[18] The noisy delirium with intervals of consciousness, or at all events, periods during which the patient may be roused, and the jactitation, restlessness, sleeplessness, and constant vomiting occurring in these cases after operation, resemble rather the symptoms of acute yellow atrophy than the epileptic convulsions alternating with deep coma, and the initial but not constant vomiting of uræmia. A purely mechanical explanation may be offered of the cerebral symptoms in all these cases—namely, that they were due to fatty embolism. Phosphorus is supposed to produce general fatty metamorphosis by reducing the oxidising power of the blood. Alcohol and some other poisons have a similar effect. Acute yellow atrophy is believed by many to be merely another name for phosphorus poisoning; but its common occurrence in pregnant women in whom oxidation is deficient, and the demonstration that in pregnant and suckling quadrupeds and laying hens the liver and kidneys often show cells infiltrated with fat, render the supposition likely that acute yellow atrophy may be due to other causes than phosphorus and may yet be dependent upon deficient oxidation. If it be granted that diminished oxidising power in the blood causes the deposition of fat in the liver and elsewhere, a similar hæmic condition will prevent the fat from being duly oxidised when it passes again from the hepatic cells into the general circulation. So long as no more fat is excreted from the liver into the general circulation than the blood is able to oxidise no ill results will happen from its abnormal accumulation in the liver itself; but should events occur which still further lessen the oxidising power of the blood the circulation may become laden with more fat than it is able to deal with. The result will be fatty embolism of the lungs, or brain, or of both. The event which produces such results may be the administration of chloroform, which, by still further deoxidising the blood, aggravates the tendency to fatty accumulation already present. Fatty embolism of the lungs has been regarded, as previously stated, to be the cause of some of these deaths, and it has been supposed that fat was set free into the pulmonary circulation by the local disturbance occasioned in the parts operated upon. It is difficult to believe that such an operation as tenotomy or the scraping of an abscess could produce such infarction from the local disturbance caused; but it is not difficult to suppose that pulmonary fatty embolism might be produced by the circulation of fat from the liver into the lungs. Yet against this view it may be urged that the symptoms were not in any one case such as might be supposed to be caused by pulmonary embolism. One would expect to find, were this the case, extreme dyspnœa, restlessness, and cyanosis; and of these symptoms restlessness alone was present, whilst the other symptoms, delirium and persistent vomiting, cannot be attributable to pulmonary embolism alone. Similarly, insuperable objections may be urged against the view that fatty embolism of the brain is the cause of cerebral symptoms. Were this the case other symptoms, such as convulsions, local paralysis, or hemiplegia, would almost certainly occur; but none of these were present in the cases under notice. An explanation must therefore be sought on other lines.

At the Berlin Conference in 1890 Dr. Lauder Brunton suggested that the urine should always be tested before the administration of chloroform for the presence of alkaloidal substances, which he believed might contra-indicate the use of the anæsthetic. More recently, in his address before the Pharmaceutical Society,[19] he stated that Professor Poehl of St. Petersburg was able to predict, from the quantity of alkaloidal substances precipitated from the urine, whether the administration of chloroform would be dangerous in a given case or not. If this be so, excess of alkaloidal substances in the body may also produce these remotely fatal

[14] Diseases of the Liver. Transactions of the Sydenham Society, vol. cvii.
[15] Gazette des Hôpitaux, March 3rd, 1881. [16] Op. cit.
[17] Medical Times and Gazette, vol. ii. 1860, p. 351.
[18] Hilton Fagge, vol. ii., first edition, p. 268.
[19] October, 1893.

consequences of the administration of chloroform; but why should one patient exhibit this excess of alkaloidal substances in the urine and another not? It has long been known that even the normal products of digestion are poisonous if they are absorbed into the general circulation, and it is believed that these products are normally prevented from entering the general circulation by the action of the liver, which receives them from the intestinal veins and pours them out again in the bile.[20] If the functions of the liver are at fault, the products not only of normal digestion but also of putrefaction taking place in the intestines may pass into the general circulation and may cause dangerous or fatal consequences, unless eliminated by the kidneys. A liver which is morbidly fatty cannot fail to be functionally inactive. The livers in most of these cases (probably all) were markedly fatty. This condition probably preceded the operations, because it is unlikely that it could have been produced by the action of the chloroform alone, owing to the short time of administration and the small amount of the anæsthetic used. Yet from evidence adduced it seems to be certain that chloroform tends to produce fatty changes in the liver and elsewhere, and therefore it may aggravate this condition when already present. Theoretical though the explanation may be, I am unable to account otherwise for these fatalities after operation than by supposing: (1) that these deaths (in all but Cases 9 and 10) were due to auto-intoxication; (2) that a fatty condition of the liver and therefore functional disturbance of the organ existed before the operations; and (3) that chloroform and operation shock combined aggravated the condition already present and thus loaded the system with toxic alkaloids which the kidneys, notably in Cases 6 and 7, were unable to eliminate. The practical results of such views are: (1) that in no case should chloroform be given to patients suffering from fatty liver; (2) that as it is impossible from physical signs and symptoms to do more than surmise the existence of fatty liver we must rely on signs of functional inactivity of the liver, as indicated by the excess of alkaloidal substances present in the urine; and (3) that the precise nature of such alkaloidal substances and the best methods of detecting them must be left for further investigation.

The mortality in these cases shows the futility of the treatment adopted, which consisted in the free administration of alcohol combined with morphia, opium, and other anodynes. Such treatment, if the symptoms really depend upon fatty conditions, may be not only useless but positively harmful by actually increasing the state which it is supposed to remedy. Citrate of caffeine and carbonate of ammonia are not open to this objection, and perhaps might prove of service in similar cases. Also it is possible that active purgation might be beneficial. It is worthy of notice that the only patient who recovered (Case 10) suffered from most profuse hæmorrhagic diarrhœa twenty-four hours after the operation. The probability that her symptoms depended upon mercurial poisoning has already been suggested; still, it is by no means certain that the explanation is correct. Violent vomiting and profound collapse preceded the diarrhœa, and it is possible that the diarrhœa, whether or not produced by mercury, may have been salutary in her case. Some cases of supposed acute yellow atrophy of the liver are said to have recovered under active purgation.

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ON INFLUENZA AND SOME OF ITS SEQUELÆ.

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ON Dec. 19th, 1891, I communicated to the profession, in the columns of THE LANCET, what I then believed to be a safe, reliable, and effective treatment of influenza. My conviction as to the value of my recommendation was founded upon an unusually extensive experience of the treatment of this disease. Since then my increased opportunities supplemented by numerous testimonies from competent and reliable observers, practising widely apart from each other, have only served to confirm, beyond the shadow of a doubt, the statements I then made. I now beg leave to make further practical observations on the nature and treatment of this pest.

I assume that influenza is of microbic origin; and I have no doubt that, eventually, the labours of bacteriologists will enable them to prove this to a demonstration; it is also evident from the symptoms that the poison generated during the vital activity of those microbes delivers its chief and most deadly blow to the nervous system. Everyone is familiar with those symptoms; but there is one symptom which must have been observed by everyone conversant with this scourge, but which has hitherto remained undescribed, though, I hold, it is pathognomonic of the disease. I refer to that strange expression of the eyes which one could imagine might have been produced by a mixture of the peculiar look which is found in measles and that which is noticeable in a person under the influence of morphia. It is neither of those expressions taken singly, but a strange compound of the two. I propose, therefore, to call this singular symptom a "morbillomorphic" expression of countenance. It is found in cases where catarrhal symptoms are absent, not being dependent on such. It has been proved, by the experience of the recent epidemics, that influenza may exist with, and without, catarrhal symptoms, so that the term "epidemic catarrh" is inapplicable to the disease.

In my early use of the bicarbonate of potash in influenza I was carried away by the prevailing notion that this salt, in large doses, such as I was led to use, was not unattended with danger, from its supposed liability to depress the heart's action to an extreme degree. For this reason I watched the effect of my treatment with the utmost care, resolving to use a cardiac stimulant whenever there was any indication of heart failure. Among a very large number of cases I saw only two in which there was any alarming cardiac depression, and I am convinced, by experience and reflection, that the depression in those cases was not due to the salt, but to conditions peculiar to the patients. I wish, therefore, with all the emphasis I can, to denounce this superstition, which, I doubt not, has prevented some over-cautious practitioners from using a remedy which is at once simple, safe, reliable, and satisfactory.

I wish also to draw attention to another point of the greatest consequence. The bicarbonate treatment, if used early, will prevent debility and obviate sequelæ. The prevention of the sequelæ which usually follow influenza is, in importance, second only to the saving of life in the first instance. The forms of sequelæ I have chiefly in my mind are the mental distress and the physical debility, both of them often long-continued and not infrequently ending disastrously. The judicious use of the bicarbonate of potash will not permit those baneful camp-followers to appear at all, and will compel their removal when they have unhappily been allowed to effect a lodgment. Let me give an illustration from my own practice, as a painful example which has only too many parallels. I was called in to take charge of a female patient, who was suffering from influenza. She had a rather severe attack. She was also expecting to be confined shortly. This was in 1892. During the previous epidemic she had been affected by the disease, but the medical man in attendance did not use my treatment; and ever since that time she was not only physically weak, but was continually tortured with thoughts of suicide. Under the bicarbonate treatment she made an excellent recovery. At the proper term she was confined in the usual way, and the convalescence was quite satisfactory. Subsequently I happened to meet her, when I used the physician's privilege and asked her whether she was still troubled by any of the distressing thoughts which had formerly made her life miserable. "No," she cheerfully replied, "all my bodily weaknesses are gone, and those dreadful thoughts have gone along with them." A tendency to mental derangement has been frequently seen as one of the least welcome sequelæ of influenza; and I am satisfied that in this case it was due to her first attack of the disease and had nothing to do with her pregnancy.

I have had independent testimonies of a similar character from practitioners who have adopted my treatment. I will give a short extract from each of two such testimonies. On Dec. 7th, 1893, an experienced practitioner wrote to me: "I have been using your treatment in every case lately, and I have had no acute case which has not cleared up, and no case which has developed serious manifestations in the way of sequelæ." Another practitioner of acknowledged ability, acuteness, and candour, and very extensively engaged in practice, wrote to me on Dec. 24th, 1893, referring to the epidemic prevailing then in Edinburgh: "I have found the

[20] Dr. Lauder Brunton: Disorders of Digestion, 1886, p. 17.

drug eminently successful; and, while such sequelæ as pneumonia are in no way apparently affected by its use, either favourably and certainly not unfavourably, others, such as the mental depression and physical languor, do undoubtedly yield to its continued exhibition. I am confident that we will never have a more trustworthy therapeutic agent for influenza than the bicarbonate" (of potash). This last-quoted gentleman previously informed me that they had had no sequelæ except in cases where the mischief had been done before they were called in; and I am aware that he has subjected my treatment to the most rigid clinical tests, so that his conclusions may be confidently accepted.

I have ascertained that some practitioners, while provisionally accepting my treatment, have not faithfully followed my directions for the use of the drug, and were thus led to inconveniences which they might have anticipated and avoided. It may not be amiss, therefore, if I give a short account of the usual way in which I treat my patients suffering from this disease. The patient ought to be confined to bed, and, the tendency to develop chest complications being so strong, the temperature of the room should be about 70° F. The room itself ought to be large and well ventilated, but free from draughts. The bowels should be acted on, and castor-oil in hot coffee or milk will do this office well. I give thirty grains (to an adult) of the bicarbonate of potash in a teacupful of milk every two or three hours, according to the nature of the attack, until the acute symptoms and fever have disappeared, which usually happens in from four to six hours. In addition to the milk in which the salt is administered, the patient should be well supported with good beef-tea and nourishing soups from the first. On the subsidence of the fever the salt may be given thrice daily in undiminished doses, and continued for two or three days. Care should be taken not to allow the patient to leave the warm room until convalescence is fully established.

I am fully aware that my treatment of this disease has been very extensively adopted by the profession; but I am also aware that very many—not a few in eminent positions—are still working on the old lines, with the old disastrous results. Should any considerable number of the latter perchance cast their eyes on this paper, I cherish the hope that the bicarbonate of potash treatment of influenza will, in consequence, be diffused over an ever-increasing area, for I am confident that when once adopted it will never be lightly relinquished for another.

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ON MENTAL THERAPEUTICS.

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THERE can be no doubt in the minds of thoughtful men as to the fact of the great influence—therapeutic influence—that the mind has over the body. Many monographs have been written from time to time on this subject, which is also incidentally touched upon with more or less brevity in various works on the mind and brain, but as regards its practical application is largely left in the hands of quacks, who are allowed by the medical profession to exploit at will the rich fields of scientific and pecuniary interest which it at present affords to those who are sufficiently clever and unprincipled to work the latter without scruple. It is difficult to understand why such a powerful means of cure is so systematically neglected and even ignored by the profession, with the unhappy results described above of leaving it to be used illegitimately by others. I suppose it is because mental therapeutics have been practically for so long the real *modus operandi* of the vast army of charlatans that the whole subject has acquired such a bad name that most men fear for their own reputation if they touch it; indeed, it is only because I have been taught practically so much of its real value, and feel so strongly that its continued neglect is no small blot upon the present system of medical training, that I venture with some trepidation to call attention to its almost universal neglect. While its power is everywhere seen and felt in the out-patient department, in the hospital ward, in the consulting-room and by the sick-bed, it is seldom spoken about and still less often taught, though few are bold enough to attempt to deny its potent powers for good. If one turns from the physician's daily life to his library, one still fails to find in any modern system of medicine the subject fairly and fully recognised. There are many manuals and systems of therapeutics, but where is the great therapeutic power of the mind given its due place and prominence? It is the same if one listens to the teaching, clinical or otherwise, in the hospitals and class-rooms. Students listen with rapt attention to the powers of cocaine, piperazine, phenocoll, and the whole round of well-advertised modern drugs, but how often is their attention directed, save in ridicule, to this mighty curative agent that in its powers pretty well balances the whole pharmacopœia—the mind? Does any practical medical man doubt these powers? Is he not aware of the ingredient "faith," which, if added to his prescriptions, makes them often all-powerful for good? Does he not know the value of strongly asserting that the medicine will produce such and such effects is a powerful means of securing them? Has he never witnessed the therapeutic value through the mind of the dentist's waiting-room in curing toothache, or of the consultant's spacious dining-room and back numbers of *Punch*, combined with the physician's august presence in the consulting-room? And has he not seen how much more efficacious the very same drugs have proved when prescribed in such solemn surroundings than in his own humbler environment and less august presence? If, then, this power is so well known, why, in the name of common-sense, should it be pooh-poohed and ignored as it is? It has its laws of action, its limitations, its powers for good and for evil: would it not greatly help the medical student if these were indicated to him by his lawful teachers instead of his being left to glean them uncertainly from the undoubted successes of the large army of irregulars? Let me bring these suggestions to a point in order to give them a practical bearing and illustrate the value of legitimate mental therapeutics by briefly enumerating some part of the medicinal, or at any rate therapeutic, value of the common mantelpiece striking clock—I say "clock" in preference to "watch" because it is distinctly of greater value, and I say "mantelpiece" instead of "eight-day" or "hall" clock for the same reason. I would also say "striking clock," with the half-hours and quarters, if possible, as being of still greater efficacy. It is perfectly astounding to see the cures that can be assisted, and in some cases altogether effected, by this agency, the power of which is obviously purely mental.

Sir Dyce Duckworth, without dwelling on the value of mental therapeutics, has pointed out an instance of their valuable use by means of the clock in urging the great efficacy, in cases of persistent vomiting, of giving the liquid food in teaspoonfuls every five minutes *by the clock*. There can be no doubt that food thus given is readily retained, and still more so if the clock can be clearly observed by the patient himself from the bed. At the exact time the mind, acting through the brain, enables the stomach (perhaps by some inhibitory power over the vomiting centre in the medulla) to retain the food.

The value of the clock in labour is not universally known, but it is very marked. In a large proportion of cases, when the pains are tedious and irregular in force and frequency, they can be made quite regular, to the great advantage of all concerned—patient, infant, and medical attendant—by the aid of the clock. The law has only to be firmly laid down of "a pain every five minutes, of two minutes' duration, with a three minutes' interval," for it to be obeyed in a majority of such cases. When by the clock the time arrives for the pains to begin it should be clearly announced to the patient, and the fundus should at the same time be gently pressed by the hand on the abdomen, the nurse being meanwhile ordered to give, officiously, any needed assistance; and the pain, being thus expected and prepared for, commences, and should be kept up for the two minutes, complete rest being then given for the remaining three, when the process is renewed. After two or three pains are thus regularly induced the routine is established, and there is no difficulty in continuing regularly till the close of the second stage. The essence of success lies in invoking the therapeutic aid of the clock. Of course, there are patients who are not amenable to this form of treatment, as there are others who cannot tolerate quinine or opium.

Again, when the child is born what a boon, what a fountain of health, the clock may become to both mother and child. The nursery, when the value of the clock is unknown, is a scene of confusion and bad management, however full the little cupboard may be of drugs. What peace and

comfort, on the other hand, reign when mother and nurse have learned that the child must be nursed in the day every two hours *by the clock*, whether awake or asleep, and every four hours at night for the first fortnight at any rate, and never nursed between times or when it cries, or in order to put it to sleep. The real value of the clock in this, as in all other cases, is truly scientific, and lies in its potent aid towards rapidly forming accurate psycho-physical habits or artificial reflexes in the brain.

Few people, and possibly not all physicians, know what a potent aid to sleep a clock (in this case a non-striking one) is, by enabling a person to go to bed at exactly the same hour each night, regularity in this respect being a powerful hypnotic.

I will not touch on the importance of the clock in administering medicines, given as they are so often now in small divided doses every fifteen or thirty minutes, because this does not strictly illustrate its therapeutic value, but I will close with one more illustration of its power with regard to constipation, this time from a recent case. A woman about seventy years of age came to me in deep distress about her obstinate and continued constipation, which was so severe that not only was there no natural action of the bowels, but even enemas and pills often failed, and periodically recourse was compelled to the mechanical evacuation of the rectum by the physician or nurse. The painful condition had continued for years, gradually becoming worse. The patient was of exceptionally powerful mind and will, and remarkably intelligent. Seeing this, and relying on my friend the clock as an aperient in this instance, I told her I would certainly cure her if she would exactly obey my instructions for a period of from one to two months. I explained to her the power of an exact habit over the bowels, and pointed out that nearly all constipation was caused by a neglect of forming such a habit in childhood, this being probable in her case too, and that, though it was rather late in the day, it could yet be formed in her. The hour was fixed for 9 30 A.M. exactly by a clock on the mantelpiece of the bedroom that struck the half-hour, and at first the patient was aided by a pill at night. She breakfasted in bed and often wanted to rise to relieve the bowels before 9.30 A.M. This was never allowed. She was told that to be before the time would destroy the habit as much as being after it. At 9 30 A.M., as the clock struck, she was taken out of bed, and if the bowels did not act there and then a little glycerine or small enema was given till they did act. After a very few days there was no trouble. At the end of six weeks the habit was firmly established, and at the end of six months she had never missed having the bowels regularly relieved every day at 9.30 A.M. She has now no trouble, very occasionally only requiring a small pill. The case is remarkable, because, though the value of the clock is greatest in youth, it shows it has still a most powerful influence in the decline of life.

In these remarks I have but briefly illustrated one single method of applying mental therapeutics. Other methods still more important to understand, with the various laws that govern them, will readily suggest themselves.

Westbourne-terrace, Hyde-park, W.

NOTES ON SOME CASES OF NERVOUS DISEASE TREATED WITH DR. BROWN-SÉQUARD'S ORCHITIC FLUID.

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BY permission of the physicians under whose care the various patients were we are able to publish the results obtained by the use of Dr. Brown-Séquard's orchitic fluid at the National Hospital for the Paralysed and Epileptic, Queen-square.

The fluid was obtained directly from Paris, through the kindness of Dr. Brown-Séquard. In each case the injections were made daily, either under the skin between the shoulders or under the skin of the buttock. The injections were made with a Koch's syringe, which was kept aseptic by being immersed when not in use in absolute alcohol. The needles were carefully sterilised by boiling before use, and were kept in a 1 in 20 carbolic lotion. Before each injection the skin of the patient and the hands of the operator were carefully cleansed.

The dose, commencing at one gramme of the fluid with one gramme of distilled water, was increased gradually up to four grammes of the fluid and an equal quantity of water, and in four cases up to six grammes of each. These large doses were injected in two places. In three cases the fluid was used undiluted. With the large doses some pain was complained of at the seat of injection; this was not increased when the fluid was used pure. The pain was found to be much lessened by injecting the fluid very slowly, and, taking into account the size of the injection, pain was very slight.

The immediate effects of the injection were practically *nil*. No alteration in the pulse or respiration rate could be detected. Two patients stated that they could feel pricking sensations in the paralysed limbs about three minutes after the injection; both these patients were the subjects of functional disease. In three cases abscesses developed at the seat of injection; these abscesses were opened and treated antiseptically, and rapidly healed, causing little discomfort. The temperature was carefully taken every four hours in each case, and remained on the whole practically normal. In a few of the cases there was an occasional rise up to 100° F. after an injection. Observations were of course made on the temperature before the course of treatment was begun. The only marked elevation of the temperature was when an abscess was forming at the site of an injection.

As will be seen on referring to the subjoined table, we were able to treat by this method twenty-three patients. Amongst these will be found four cases of tabes dorsalis, two of Friedreich's ataxy, and one of ataxic paraplegia. In three of the cases of tabes and in both the cases of Friedreich's ataxy no improvement was noticed. The ataxy was not less, the pains were still present, and gastric crises still occurred and were not altered in any way. In one case, under the care of Dr. Ferrier, there was some improvement. The subject walked a little better after his course of treatment; his knee-jerks, however, did not return and his pains still occurred. This patient before he was admitted to the hospital was extremely alcoholic, and had been leading a very irregular life, so that the effect of his abstinence from alcohol and of the regular life in the hospital must be taken into account. He left the hospital after a three weeks' course of treatment, having been there about seven weeks. He has relapsed after returning to his former habits. How much, therefore, of his improvement can be attributed to the treatment adopted and how much to his changed mode of life is doubtful. In the case of ataxic paraplegia the patient at first began to improve considerably; this improvement was maintained for about ten days, but afterwards he rapidly lost the ground he had gained and returned to his former condition. None of the other patients showed any signs of improvement in their physical condition, but they all expressed themselves as feeling better. Four cases of disseminated sclerosis and two of lateral sclerosis were treated in the same way. Here, again, no improvement could be detected in the patients' physical condition, although they almost all said they felt better after the injections. Four cases of paralysis agitans were treated, and in these, again, there was no improvement noticeable. One of these cases, a woman sixty-eight years of age, appeared to be getting so rapidly worse, the pulse becoming very weak, that it was thought inadvisable to continue the treatment for longer than three weeks. No untoward result, however, ensued, and the patient returned to her previous condition. One case of alcoholic neuritis was treated without any more rapid improvement than is usually obtained in these cases; the injection after four weeks was accordingly discontinued, and the hypodermic injection of liquor strychninæ substituted, under which he eventually recovered. Two cases of functional disease were also subjected to this method of treatment, but neither patient improved. In both these cases tingling in the limbs was felt shortly after the injections.

As at the commencement of the observations a considerable number of the patients expressed themselves as feeling better after the injections it was thought advisable to inject two patients with distilled water only, as a test, the same precautions and apparatus being used for them. Two cases under the care of Dr. Buzzard, who suggested the trial of this test, were placed under observation after

TWENTY-THREE CASES OF NERVOUS DISEASE TREATED WITH DR. BROWN-SÉQUARD'S ORCHITIC FLUID.

No.	Name, age, and sex.	Physician.	Disease.	Symptoms.	Duration of treatment and dose.	Result.
1.	E. C. Forty. Male.	Dr. Buzzard.	Tabes.	Marked ataxy of arms and legs; sensation of legs impaired; Argyll-Robertson pupil; difficulty in micturition; lightning pains; knee-jerks absent.	Six weeks; injection daily; up to four grammes.	No change.
2.	B. P. Thirty-two. Male.	Dr. Ferrier.	Tabes.	Marked ataxy of arms and legs; Argyll-Robertson pupil; difficulty in micturition; lightning pains; knee-jerks absent.	Six weeks; injection daily; increased to six grammes.	No change.
3.	P. J. Forty-three. Male.	Dr. Ferrier.	Tabes.	Ataxy of legs; lightning pains; pupils react; some sensory disturbance in legs; knee-jerks absent.	Three weeks and a half; injection daily; increased to six grammes.	Slight improvement.
4.	S. R. Thirty-eight. Male.	Dr. Jackson.	Tabes.	Slight ataxy of legs; marked sensory disturbance; gastric crises; Argyll-Robertson pupils.	Six weeks; injection daily; increased to four grammes.	No change.
5.	U. S. Fifteen years and a half. Male.	Dr. Buzzard.	Friedreich's ataxy.	Ataxy of legs and arms; slight alteration of speech; slight tremor of head; knee-jerks absent.	One month; injection daily; increased to four grammes.	No change.
6.	E. B. Sixteen. Female.	Dr. Ferrier.	Friedreich's ataxy.	Ataxy of legs and arms; tremor of head; no sensory disturbance; knee-jerks absent.	Five weeks; injection daily; increased to six grammes.	No change.
7.	W. Y. Twenty-five. Male.	Dr. Bastian.	Ataxic paraplegia.	Marked ataxy of legs; slight tremor of hands; knee-jerks exaggerated; no sensory disturbance.	Six weeks; injection daily; increased to six grammes.	No change. Appeared to improve at first; afterwards relapsed.
8.	E. B. Thirty. Female.	Dr. Buzzard.	Disseminated sclerosis.	Slight rigidity and weakness of legs; tremor of hands; nystagmus; optic atrophy; reflexes exaggerated.	Four weeks; injection daily; increased to four grammes	No change.
9.	J. B. Thirty-six. Male.	Dr. Jackson.	Disseminated sclerosis.	Rigidity of legs; slight tremor of arms; nystagmus; optic atrophy; reflexes exaggerated.	One month; injection daily; increased to four grammes.	No change.
10.	A. B. Forty-nine. Female.	Dr. Buzzard.	Disseminated sclerosis.	Weakness and rigidity of legs; some tremor of hands; nystagmus; optic atrophy; reflexes exaggerated.	Four weeks; injection daily; increased to four grammes.	No change.
11.	G. C. Thirty. Male.	Dr. Buzzard.	Disseminated sclerosis.	Marked tremor of arms; spastic legs; incontinence of urine; nystagmus; reflexes exaggerated.	Four weeks; injection daily; increased to four grammes.	No change.
12.	J. W. Fifty-nine. Male.	Dr. Bastian.	Lateral sclerosis.	Weakness and rigidity of legs; difficulty in micturition; reflexes exaggerated.	One month; injection daily; increased to four grammes.	No change.
13.	W. D. Twenty-five. Male.	Dr. Buzzard.	Lateral sclerosis.	Weakness and rigidity of legs; difficulty in micturition; reflexes exaggerated.	Five weeks; injection daily; increased to four grammes.	No change; slight improvement, if anything.
14.	J. M. Forty-four. Male.	Dr. Buzzard.	Paralysis agitans.	Tremor of hands; impassive face; knee-jerks obtained.	Three weeks; injection daily; increased to four grammes.	No change; if anything, deterioration.
15.	W. R. Forty-six. Male.	Dr. Bastian.	Paralysis agitans.	Tremor of hands; impassive face; knee-jerks obtained.	One month; injection daily; increased to four grammes.	No change.
16.	U. S. Sixty-eight. Female.	Dr. Buzzard.	Paralysis agitans.	Tremor of hands, arms, and legs; very advanced case; patient bedridden.	Three weeks; injection daily; increased to four grammes.	Worse; pulse became so feeble that injections were stopped.
17.	B. S. Fifty-six. Male.	Dr. Buzzard.	Paralysis agitans.	Tremor of hands; impassive face; reflexes present.	Four weeks and a half; injection daily; increased to four grammes.	No change.
18.	W. M. Twenty-nine. Male.	Dr. Bastian.	Double hemiplegia.	Weakness of both arms; weakness of both legs; history of two attacks of hemiplegia; reflexes exaggerated.	One month; injection daily; increased to four grammes.	No change.
19.	P. B. Nine. Male.	Dr. Bastian.	Left-sided hemiplegia.	Left-sided hemiplegia, with marked rigidity of arm and leg.	Three weeks; injection daily; increased to three grammes.	No change.
20.	F. B. Forty-one. Male.	Dr. Ferrier.	Peripheral neuritis.	Weakness of legs; pains in calves; muscular wasting; electrical reactions changed; knee jerks absent; pupils react.	Three weeks; injection daily; increased to four grammes.	Slight improvement
21.	J. J. Forty-seven. Male.	Dr. Bastian.	Progressive muscular atrophy.	Wasting of arms; rigidity of legs; exaggerated reflexes.	Three weeks; injection daily; increased to four grammes.	Worse; injection discontinued as he appeared to be getting worse; has since died.
22.	C. C. Thirty-nine. Female.	Dr. Bastian.	Functional paraplegia.	Weakness of both legs; some sensory affection of legs; no affection of sphincters; reflexes normal.	Three weeks; injection daily; increased to three grammes.	Slight improvement
23.	F. C. Thirty-two. Female.	Dr. Ferrier.	Functional hemiplegia.	Left-sided hemiplegia, with anæsthesia of arm and leg; reflexes normal.	Five weeks; injection daily; increased to four grammes.	No change; eventually improved.

injection with water. One was that of a woman fifty-four years of age, the subject of lateral sclerosis, and the other that of a woman twenty-nine years of age, who had slight wasting of one arm. Two grammes of distilled water were injected daily for three weeks. Both these patients expressed themselves as feeling decidedly better for the injections, although, of course, here again there was no improvement in physical condition. We therefore concluded that in all the cases there was great probability that the subjective sensation of well-being was due to the mental effect of the hypodermic injection rather than to any specific effect of the orchitic fluid.

To sum up shortly, of twenty-three cases of chronic nervous disease, one only showed any improvement in physical condition during this course of treatment, and, as has been before pointed out, the cause of this improvement must be looked upon as open to considerable question. We have obtained no results such as would justify further trial of this method of treatment.

NOTE ON EXPERIMENTAL DEGENERATION OF THE PYRAMIDAL TRACT.

BY C. S. SHERRINGTON, M.D., F.R.S.

Two years ago a valuable account by Muratoff[1] appeared on the subject of degeneration of the pyramidal tract secondary to lesion of the "cord area" of the hemispheral cortex. By use of the Marchi method of staining, the observer found that the now, repeatedly-observed, bilateral degeneration of the lateral columns resulting from lesion of one hemisphere is due to the pyramidal tract dividing at the level of the decussation into—(1) a larger portion, which in the well-known manner crosses to the opposite lateral column of the cord, and (2) a lesser portion, which enters the lateral column of its own side. Muratoff also showed a further interesting fact—viz., that after cortical lesion confined to the arm area the degeneration of the pyramidal tract does not descend further than the region of the brachial enlargement. I have myself studied the bilateral pyramidal degeneration. In doing so I satisfied myself that it was not explicable by a degeneration of the *opposite* pyramid. I did not, however, succeed in finding the splitting of the tract into two portions at the level of the decussation. Neither could I trace degenerated callosal fibres down through the opposite internal capsule and onwards in the path described by Hamilton, although I could trace degenerated callosal fibres to other destinations—e.g., various subcortical points. Nevertheless, for reasons then given in my "preliminary account,"[2] I thought the fibres to be "recrossed." Later I found and pointed out[3] that that term was untenable. At the time of my observations the Marchi method had not come into use; but Sandmeyer in 1891,[4] using the Marchi method, confirmed my statement that the uncrossed fibres were not separated in the decussation, although they appeared close below it. However, after the appearance of Muratoff's account it was obviously desirable to renew the observations by the Marchi method, not that I doubted the results obtained by Muratoff, but it was desirable to re-obtain them, and, if necessary, report on the point. Last spring I therefore excised, under deep anæsthesia, a small piece of the cortex in the arm area in one bonnet and in three rhesus monkeys. The ablation was of the left hemisphere, was quite shallow, and was rounded, measuring from four to eight millimetres across. The little wound was made under antiseptic precautions and healed rapidly. Twenty-four hours later I could detect no disturbance of movement in the limb, although two of the injuries lay accurately at the "thumb centre." I allowed the degenerative process to run fourteen, twenty-one, and twenty-eight (two cases) days respectively. Sections from the cord prepared by the Marchi method show at the decussation the correctness of Muratoff's observation. The ratio of the uncrossed to the crossed tract, as observed without actual measurement, is in one of the experiments about a quarter. I have not yet made actual countings of the fibres. Also in complete harmony with Muratoff's statement is the fact that the degeneration descends to the lower end of the brachial enlargement, but is not recognisable further down. Previously I was inclined to think, from the considerable degeneration descending below the cervical enlargement after ablations of the arm area encroaching but slightly on the surrounding cortex, that some fibres from the "arm region" of the cortex ran to spinal segments lower than the cervical; but the observations just described are, like those by Muratoff, in opposition to such a view. I am induced to place my observations on record now because I learn, through the courtesy of Professor Boyce, that observations of a kindred scope have been undertaken at University College.

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[1] Neurologisches Centralblatt, March, 1892. Also Archiv für Anatomie und Physiologie, 1893, Heft iii.
[2] Journal of Physiology, p. 177, 1885.
[3] Ibid., p. 121, 1890.
[4] Zeitschrift für Biologie, vol. xxviii., p. 177.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. GEORGE'S HOSPITAL.

A CASE OF ACUTE PEMPHIGUS IN A YOUNG ADULT FEMALE; SEPTICÆMIA; DEATH; REMARKS.

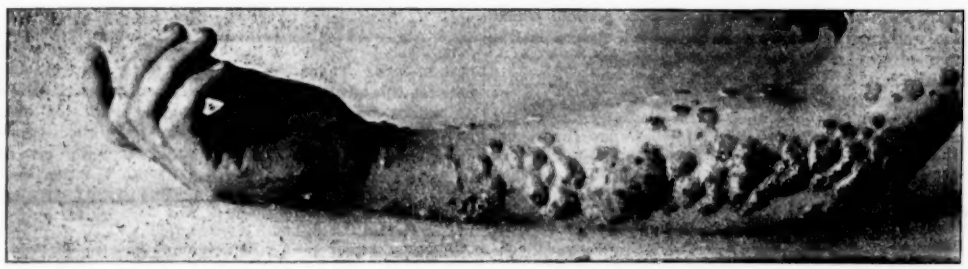
(Under the care of Dr. PENROSE.)

THE following case is an instance of a rare variety of pemphigus, to which the name "pemphigus malignus" has been applied. There does not appear to be any relationship between this affection and the more recently described forms of bullous dermatitis (Dühring), for, as indicated in the engraving, which is from a photograph, the condition was typical of pemphigus. In Dr. Newton Pitt's case the patient, a man aged fifty, developed the eruption only a fortnight before his death which was due to the large area of skin affected. For the notes of this case we are indebted to Mr. Gerard Carré, house physician.

A young woman twenty-two years of age, a kitchen-maid, was first seen at the hospital as an out-patient on Oct. 26th, when she complained of "sore-throat" and pain and difficulty in swallowing. On inspection the palate, fauces, and the upper part of the pharynx were found to be somewhat red, but nothing more definite was to be seen. Compressed chlorate of potash lozenges and a mixture consisting of sulphate of magnesium, iron, and quinine were prescribed for her. She was not seen again until the day of her admission to the hospital on Nov. 14th. Between this date and the preceding one she had been under the care of Dr. George Weldon, who adopted the following treatment. On Oct. 28th he ordered a boracic acid gargle and a mixture containing five minims of antimonial wine for a dose every four hours. On the 29th she was given quinine, chlorate of potash, and sulphate of magnesium. On Nov. 9th she was ordered an application containing three grains to the ounce of nitrate of silver "to be painted inside the throat," and a mixture similar to that of Oct. 29th. On Nov. 13th Dr. Weldon saw her again and gave her arsenic (liquor Fowleri, four minims) and eight grains of iodide of potassium three times a day. On the following day he saw her again, advising her to come to the hospital, and sent with her a letter of recommendation as a case of acute pemphigus.

On admission to the hospital the patient gave the following history. With the exception of measles in childhood she had had no previous illness; three weeks before she had first experienced a "sore-throat," which lasted for a week and then subsided, but on Nov. 8th the throat was again sore and had continued so up to the time of admission. On Nov. 11th she experienced "redness with smarting" over both forearms, but she had no other symptoms. There was no rigor, vomiting, headache, or backache. On the 12th during the night there was much itching over the forearms, which caused her to scratch them, and on the morning of the 13th she first noticed blebs on the forearms and fronts of both

knees. She had never suffered from anything like this before. On admission to hospital her condition was as follows. The temperature was 99·4° F. There was an enlarged gland on the right side of the neck, which was not tender; there was some redness on the inside of the throat, and on the left tonsil there was a white appearance which, in the notes of the medical registrar, is described as "possibly membrane." There were some vesicles on the soft palate; the tongue was abnormally clean, with enlarged papillæ. At this time the patient did not seem to be at all ill in herself. Both forearms and arms had clear vesicles on them, being most thickly distributed along the course of the right ulnar nerve, where the blebs were the size of large beans and nearly confluent; no bleb was purulent, but some few tended to be hæmorrhagic; the base of each bleb consisted of reddened skin. There was no dermatitis between the blebs, but she complained of smarting pain in the neighbourhood of the eruption. There was no eruption on the palms, but it was also seen on the backs of the hands, and was everywhere more marked on the extensor than on the flexor surfaces, except that the inner edge of the right arm was the most markedly affected part. There was a group of clear vesicles just above each patella, and there were a few scattered ones on the dorsum of the foot and on the front of each leg. The vesicles appeared to become umbilicated before reaching the size of a split pea. The urine was normal, of sp. gr. 1014, and non-albuminous. The heart and lungs were normal. She was placed on ordinary diet. Her treatment consisted in a mild senna purge and a morphia draught when required, and she was put on arsenic (three-minim doses) and quinine. On Nov. 15th her condition was much the same. The vesicles on the soft palate were fading away. The illustration, which is from a photograph, shows the appearance of the arm on this day.



Nov. 16th.—Fresh crops of vesicles have appeared on the face; some of the blebs have broken on the arms. The vesicles are running together to form larger bullæ. The temperature is 99° and the pulse 76. The bowels have acted twice. The treatment consists in the application of calamine lotion and antiseptic wood-wool dressings, the arsenic being increased from three to five minims.

17th.—There are many more vesicles; several have broken on the legs and arms, and those on the back cause much irritation. The temperature is 100·6°. The bowels are not open. Half a scruple of compound powder of ipecacuanha was given immediately.

18th.—There are fresh crops of vesicles, which are now invading the scalp. The patient's hair was cut off. The blebs are breaking all over the body and the irritation is very great. The temperature is 101°. The bowels did not act. The arsenic was increased to seven minims a dose.

19th.—The patient is in much the same condition as she was yesterday. Fresh bullæ are still appearing, and to-day the whole body was dressed with lint and vaseline. The temperature is 101°. There is no action of the bowels.

20th.—The continued constipation is causing the patient a great deal of discomfort, and so this morning she was given a dose of senna and a glycerine enema afterwards; this, however, was without effect, and at 7 P.M. an enema was given consisting of two ounces of castor oil made up to a pint of olive oil, with the result that the bowels acted freely several times. The temperature was 100·4°. She is being given four ounces of brandy daily.

21st.—Some fresh bullæ made their appearance on the palms of the hands to-day. The temperature is 102·4°. The bowels are acting freely. Diet as nutritious as possible is now given. The liquor arsenicalis was discontinued, six minims of antimonial wine every four hours being substituted.

From the 22nd the patient's condition became decidedly worse, and she passed rapidly into a typhoid condition, which was evidently due to the large raw areas extending over the greater portion of the body. The following methods were successively tried to keep the surface sweet—viz., immersion in hot boracic baths, followed by carbolic oil dressing. The former evidently gave considerable relief, but the latter caused some irritation, and was only applied once. The bullæ continue to appear, some fifty or sixty a day, and rapidly became pustular, whilst the patient became steadily weaker. Her breath had an unpleasant odour, and she suffered much from vomiting. The temperature rose to 102·8°, and the pulse to 140. On the 24th the antimonial wine was discontinued, and a mixture containing bismuth, bimeconate of morphia, and dilute hydrocyanic acid was substituted in order to control, if possible, the vomiting. The patient, however, became gradually more exhausted and finally died on the 29th. Up to the very end fresh bullæ continued to appear, many of them occurring on the sites of previous ones.

Necropsy.—There was no disease of any internal viscus. The spinal cord looked particularly healthy; there was some slight congestion about the duodenum, which fact is of some interest in connexion with the large amount of the body and face (probably about four feet) which was a raw wound, and the correlation between this disease and burns. On the other hand, the patient had had a considerable amount of vomiting, probably of a septicæmic nature, and it is very possible that the congestion of the duodenum was "post hoc et non propter hoc." There was no pneumonia.

Remarks by Mr. CARRÉ.—There are a few remarkable points about the case worth calling attention to, and chief amongst these is, first, its occurrence in a young adult (apparently otherwise a perfectly healthy and strong subject) with a fatal termination. Secondly, the considerable amount of ulceration left by the eruption is remarkable, since it is often said not to cause ulceration of the skin. Again, the eruption showed a very marked tendency to symmetry; in fact, so symmetrical was it in the earlier stages that it picked out special seats of election—e.g., the præpatellar region—in a most remarkable way. Another point is that the scalp, which is usually said not to be affected, suffered in this case alike with the other regions of the body. Lastly, it is worth while calling attention to the fact that small doses of tincture of iodine often repeated checked the persistent vomiting, which had failed to yield to almost every other drug. I have to express my acknowledgments to Dr. Cyril Ogle, the medical registrar, for the earlier notes of the case; also to Mr A. F. Damon for the photograph; and to Dr. Harvey Goldsmith for a sketch of the ulcerated surface of the body as it appeared post mortem.

Remarks by Dr. PENROSE.—The above case illustrates, I think, very forcibly the gravity of this rare condition, and how very little amenable to treatment it is. Here there is a strong, healthy-looking woman, who merely complained five weeks previously to her death of a sore-throat, which on inspection did not appear to be serious, although it never became quite well, and three weeks after its first occurrence the appearance was suggestive of membrane; but the general condition was never for a moment suggestive of diphtheria. Seventeen days before her death she first noticed the "blebs" on her forearms and knees, having experienced a good deal of itching during the preceding twenty-four hours. At first the gravity of the case was

not appreciated; but as soon as it became evident that the condition became steadily worse in spite of treatment it was realised that in all probability a rapid course with a fatal termination would occur. Dr. Newton Pitt[1] gives an account of a very interesting case and in his paper refers to the different cases published in this country. The etiology and pathology of the disease are entirely unknown, and there are in this case no new facts to add; but it is, I think, generally acknowledged that all decidedly rare conditions should be recorded, in the hope that some day, when sufficient notes have been accumulated, the meaning of the condition may be ascertained.

NORFOLK AND NORWICH HOSPITAL.

A CASE OF STRICTURE OF THE ŒSOPHAGUS; GASTROSTOMY[2]

(Under the care of Mr. C. WILLIAMS.)

GASTROSTOMY is an operation the success of which depends on certain factors which are fully appreciated by the operating surgeon, but which are, perhaps, hardly estimated at their full and proper value by the profession generally. It is doubtless within the experience of most hospital surgeons to have been requested to see a patient with a view to the performance of gastrostomy for the relief of symptoms dependent on obstruction of the œsophagus, and to find the sufferer weakly, starved, and emaciated, with a very compressible pulse, dry mouth, harsh wrinkled yellow skin, hollow eyes, and a concave abdomen, the skin of which appears to be in immediate contact with the aorta. The patient has for some time been unable to swallow, absolute starvation having been avoided only by the employment of enemata. The surgeon knows that if he performs the operation death will most likely ensue within a few hours, although the patient's hunger may be temporarily relieved. This kind of case has in the past helped to give the operation a bad name. In order to obtain prolonged life and the fullest relief it is necessary to remember that gastrostomy should be performed before starvation has set in and before the vital powers are exhausted. There is also an immense advantage in the performance of the operation in two stages, and this cannot be done when the call for food is urgent. In malignant disease of the œsophagus the result of any operation can only be palliative and of temporary benefit, but the benefit is nevertheless frequently considerable.

A man sixty years of age was admitted into the Norfolk and Norwich Hospital on June 1st, 1891. The patient was a thin, sallow-looking man. He stated that he had been perfectly well till Christmas, 1889, when he experienced some difficulty in attempting to swallow solid food. This difficulty slowly increased up to eight months previous to admission, at which time he was compelled to live entirely on fluids. Even these occasionally gave rise to violent spasm of the windpipe, which usually lasted for an hour or upwards. On admission to the hospital he was unable to swallow the softest solid food, and fluids were taken very slowly and were with much effort made to pass into the stomach. He occasionally vomited a good deal of frothy liquid. He weighed 8 st. 8½ lb. No cause was known for the commencement of the disease in the œsophagus. Nothing could be felt externally. A bougie met with obstruction opposite the cricoid cartilage; no subsequent attempt was made to pass it. Malignant disease having been diagnosed, an operation was recommended but refused. During the next two or three weeks he had several attacks of spasm of the glottis; these were generally more severe after taking fluid, usually lasting for some hours. It seemed as if the attempts to swallow forced the liquid into the trachea and thus gave rise to the spasm. He was now rapidly getting worse; the œsophagus had been completely closed for five days and he consented at last to submit to operation. On July 14th the first stage of gastrostomy was performed by making an oblique incision parallel to and distant three-quarters of an inch from the edges of the ribs, just long enough to admit two fingers. The stomach was empty and lying high up under the diaphragm; it was fully drawn forwards, and two sutures of silver wire three-quarters of an inch apart were passed through the walls near the spot where it was intended to make an opening, being left with long ends. By means of these it was an easy matter to manipulate the stomach during the process of suturing. A straight needle threaded with silk was pushed through the abdominal wall as a continuous suture in a circle half an inch from the edge of the abdominal wound. At every third of an inch the needle, having traversed through the peritoneal and muscular coats of the stomach, was taken out and reinserted, so that eight or ten free loops of silk were left protruding outside the abdominal surface. A piece of indiarubber tube was slipped through all the loops, which were pulled with moderate tightness and made fast over the tube.[3] Six sutures stitched the edge of the wound to the stomach, and the parts were covered with gauze and wool. The patient soon recovered from the effects of the operation and expressed himself as being free from pain. Thirty hours later the second stage of the operation was attempted. A small incision with a tenotomy knife was made into the organ midway between the silver wire sutures, the holding up of which not only enabled one to steady the stomach and to prevent it breaking away from its moorings, but also to know which indeed was the stomach—a difficult matter, inasmuch as the wound and the viscus itself were coated with effused dry blood. It was satisfactory to find that the serous surfaces were firmly glued together. A shortened Symond's œsophageal tube was inserted into the stomach, and two ounces of peptonised milk were passed through it in this way. The man was fed every two hours, as well as by the rectum. The next day he was comfortable, but complained much of thirst. On the third day he suffered a good deal of pain low down in the abdomen. On the fourth day he still complained of thirst and pain, but expressed himself as feeling much relieved by the operation. On the sixth day the stitches were removed, the adhesions being found to be firm; the tube was removed and inserted when food was required. On the seventh day the patient was not well, the pulse being decidedly weaker, and the edges of the wound looked sloughy; he still suffered from intense thirst. On the eighth day he gradually sank and died at 4 P.M.

Necropsy.—The adhesions were found to have given way. There was some local peritonitis in the region of the stomach, but not elsewhere. The stomach internally was quite healthy; the opening had been made near the greater curvature and towards the cardiac end. The œsophagus contained a deposit of cancer forming a ring two inches deep which completely obstructed the passage; just above its upper edge there existed an aperture which opened into the trachea. No growths were found in this tube and no cancerous deposit in any other part of the body.

Remarks by Mr. WILLIAMS.—It is perfectly surprising in how few cases of cancerous stricture of the œsophagus the operation of gastrostomy has been performed—that is, if one may judge from the instances recorded in surgical works and journals. In the last edition of "Holmes' System of Surgery" only 63 cases are mentioned, 50 of which were cases of obstruction from cancer. Dr. Gross up to 1884 could not collect more than 167 instances in which the operation was resorted to for carcinomatous stricture. A large number of these had not been recorded in the journals, but were privately communicated to him. Of the entire number 117 died in one month, and 46 survived longer than one month, the average duration of life after the stomach was opened having been thirty-three days. Of the 46 that lived upwards of one month, 2 expired in five weeks, 2 in seven weeks, 9 in two months, 2 in two and a half months, 3 in three months, 2 in four months, 2 in five months, 1 in six months, 1 in seven months, 1 in seven and a half months, 2 in eight months, and 1 in ten months. Of the remaining 18, 3 were living at the expiration of one month, 2 at forty days, 4 at two months, 2 at three and a half months, 2 at four months, 1 at five months, 1 at six months, 1 at seven months, 1 at twelve months and nine days, and 1 at thirteen months. To prove how slowly the operation has made its way, I may mention that Sédillot of Strasburg was the first surgeon to make the attempt in a man fifty-three years of age in the year 1849, just forty-five years ago; his next case occurred four years later. The late Mr. Cooper-Foster was the first to perform the operation in England at Guy's Hospital in the year 1858, nine years after Sédillot's first case. I will not dwell on this point, seeing that the operation had never before, so far as I can discover, been performed at this hospital. The slow progress of the operation may give rise to the question, Why perform so severe an operation when the disease is so hopeless of cure,

[1] Transactions of the Pathological Society, vol. xl., p. 303 et seq.

[2] An account of this case was read at a meeting of the Norwich Medico-Chirurgical Society on March 1st, 1894.

[3] Abdominal Surgery; by J. Greig Smith. Second edition, 1888, p. 357.

when operative interference is only palliative, and the extension of the disease cannot be arrested, as gastrostomy can only prolong life until the disease shall kill, and a painful death from starvation is the only prospect before us? Nevertheless, if an operation offers a reasonable chance of prolonging life, it is unquestionably our duty to attempt it. Why perform colotomy for cancer of the intestine? Has not colotomy become an established procedure for this disease? It is considered to be justifiable under conditions of the greatest gravity, and, indeed, may be indicated in any obstructive complication of the bowels that has passed beyond the power of local remedies and in which medical treatment has failed to afford relief. In many of the fatal cases already alluded to, although no permanent good was accomplished and life was not prolonged to any great length, there can be no room for question that a certain amount of comfort and relief during the remaining days or hours was afforded. The method of operation adopted in this case needs a few words. Firstly, the division of the operation into two stages: the opening was first made in the abdominal wall, and thirty hours later it was made into the stomach; secondly, the close attachment of the visceral and abdominal layers of peritoneum, to the extent of half an inch around the wound, by means of a double ring of sutures, which provided accurate apposition under elastic pressure, and which prevented the stomach from being drawn outwards; and, thirdly, the opening of the stomach by a very small incision, so strongly advocated by Mr. Bryant, who affirms that it prevents dribbling of the gastric contents. The division of the operation into two stages is supposed to be an entirely new idea. Sédillot, in his second case, postponed making the opening into the stomach until it had become united to the parietes.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

AT a meeting of this society, held on Monday, Jan. 29th, MR. TREVES delivered the first Lettsomian Lecture on the Nature of Peritonitis, of which the following is an abstract:—

I have ventured to select peritonitis as the subject of these lectures, not only on account of the fact that the diseased conditions known by that name still occupy a terrible prominence among the causes of death, but because the present time appears to be peculiarly convenient for reviewing the clinical and pathological aspects of this fatal trouble and for criticising opinions which the custom of years has endued with a spurious appearance of accuracy. By peritonitis is understood an inflammation of the peritoneum. From the limited standpoint of morbid anatomy no exception can be taken to this definition; but when it is assumed that the various clinical phenomena which are classed together under the title of peritonitis are due either solely or in the main to an inflammation of the great serous membrane then the definition becomes to some extent misleading, for peritonitis, clinically as well as pathologically, has comparatively little to do with inflammation of the peritoneum, and it would be erroneous to state that the majority of those who die of what is called peritonitis die of a peritoneal inflammation. Inflammation is by many still referred to as a calamity, as a thing that is violent, as an utter evil, and as an ill wind that can blow no other than ill, and the measures to be directed against it are commonly considered to be as drastic as those necessary to arrest the progress of fire and pestilence. This view of the inflammatory process needs to be amended, for it is by this process alone that the poison in an inoculated wound is destroyed and the growth of a parasite is arrested. But for inflammation, a man who is accidentally inoculated with a septic micro-organism becomes at once little more than a test-tube prepared for the favourable development and culture of the particular coccus or bacterium; he may be regarded as an organism not far raised above the level of a peculiarly shaped mass of agar-agar. In a case of tuberculous phthisis it is not the inflammation which is to blame as the cause of death, but the bacillus which has produced it; the inflammation of the lung prolongs the infected man's life, and his prospects of improvement and recovery depend almost wholly upon it. The "white swelling" of a tuberculous arthritis illustrates the often successful attempt of the organism to rid itself of the tubercle bacillus by means of the inflammatory process, the latter being not a malignant energy working for evil, but a process the object of which is protective, and its end is shown by the freeing of the body from noxious organisms which lead to death. Yet the process may be excessive in individual cases, may be attended by certain disasters, and may fail to some degree in its purpose. It may be assisted and modified by treatment where the latter is directed towards removing the irritants from the tissues. And what has been said of inflammation in general applies equally to inflammation within the great serous cavity of the abdomen; it is an attempt on the part of the organism to avert a too potent cause of death. The relation of what is clinically known as peritonitis to the inflammatory process requires careful consideration. In the larger number of fatal cases the leading symptoms are those of toxæmia. So far as the clinical aspect of a patient dying from peritonitis goes, he might be dying from snake-bite or from cholera poison, and after death the amount of inflammation discovered is out of all proportion to the phenomena which preceded death. A little injection of the peritoneum, with loss of its polished surface, a little general stickiness with a few frail adhesions, and a scanty mixture of pus and turbid fluid are often all that is found. This is not the formidable kind of effusion which would be expected in a case of death from inflammation. The larger the dose of the poison the quicker is the fatal result and the fewer are the manifestations of peritonitis; this is true both of human beings and animals. Death in the acute cases is said to have resulted from shock caused, in the majority, by profound nerve irritation from the sudden spreading of noxious micro-organisms or their products over a wide and sensitive surface. After a smaller dose life lasts for three or four days with symptoms of acute peritonitis, and yet after death the serous membrane shows but the early manifestations of inflammation. In other instances recovery follows after a more or less desperate illness, and this may be effected with or without the development of encysted suppuration. Of course, the power of resistance of the individual must be considered as well as the dose of the poison. The favourable cases of peritonitis are usually those in which suppuration is most pronounced, whilst the most acute and unfavourable cases show the least inflammatory changes. The surgical treatment of acute diffused peritonitis as a purely inflammatory affection by incision and evacuation of the effusion has been comparatively unsuccessful. The mortality attending the operation for strangulated hernia has not greatly improved since the introduction of aseptic measures in surgery, and in cases in which neither gangrene nor perforation of gut occurs there is something besides mere inflammation which leads to death. All this is evidence that in the larger proportion of examples of fatal peritonitis the leading symptoms are those of poisoning and not of inflammation; but it must not, on the contrary, be assumed that inflammatory phenomena are wholly subordinate in peritonitis, for in pelvic troubles and in appendix cases the signs of inflammation are paramount. It is obvious that the peritoneum has peculiarities and that there are phenomena attending its lesions which a reference to like disturbances in other serous membranes cannot explain. Suppurations of the pleuræ have not the same gravity, and this is not explained by the different extent of surface in the two cavities or by a resulting disturbance of function in the viscera covered by the respective membranes. So far as the function of viscera is concerned the visceral disorders in many cases of severe lead poisoning which end in recovery are more considerable than they are in some examples of peritonitis which end fatally in a few days. The following points may be noted with regard to the peritoneum:—1. Its surface is probably as great as that represented by the whole integument of the body. 2. It can absorb an amount equal to from 3 to 8 per cent. of the body weight. 3. It offers a limited resistance to septic organisms and their products, the resistance varying within wide limits and being affected by age and disease. 4. No tissue in the body provides more favourable conditions for healing. 5. It does not show the same degree of vulnerability in all parts, nor are all portions of it alike in the manner in which certain lesions are responded to. The part covering the small intestine is most susceptible; the parietal layer is least so. Localised forms of peritonitis and encysted exudations are comparatively uncommon in the large area occupied by the small intestine

and are commoner in the subphrenic region, between the dome of the diaphragm above and the transverse colon below, to the outer side of the cæcum, and in the pelvis. Extensive inflammation may occur in the hepatic and pelvic regions without inducing very alarming symptoms. Injuries of the intestine are usually fatal, while lesions of the liver and bile passages are commonly slow and moderate. 6. The peritoneum appears to be possessed of great sensitiveness, peculiar and not quite comparable to that possessed by the skin: this is a matter of moment in the production of shock. The sensibility is dulled or lost when the surface is inflamed or covered with lymph. 7. A matter of great interest, though of some obscurity, concerns the condition of pressure within the abdominal area and the effects which follow the disturbance of it. The cavity of the peritoneum is, of course, a potential space, and the creation of an actual cavity after incision will produce a disturbance of pressure relations which cannot be without effect on the sensitive tissues and thin-walled bloodvessels within the abdominal parietes. The effect of a mere incision into the abdomen is often very remarkable. To the surprise of the operator, a simple incision into the abdomen in a case of tuberculous peritonitis, followed by evacuation of the fluid, has been succeeded by complete cure, and numerous instances are on record in which simple incision has entirely relieved abdominal trouble; in many of these neurosis as a causative factor of the trouble seems to be out of the question. There are certain other points in connexion with intra-peritoneal pressure which remain to be mentioned. In the first place gravity does not appear to follow the usual lines within the abdomen. In the second place the frequency with which the escape of fæces fails to take place in spontaneous perforation of the intestine and in punctured wounds of that viscus is somewhat remarkable. Both Travers and Ziegler account for this by the state of intra-abdominal pressure, and Klemm asserts that the idea of the wound in the bowel being blocked up by prolapsed mucous membrane is fallacious. 8. The last point concerns the possibility of the peritoneum acquiring some degree of immunity from septic infection. This condition of immunity can be produced artificially in animals and appears to be possible in the human subject. Other things being equal, an operation carried out within the abdomen of a person who has had chronic peritonitis or who has exhibited repeated subacute attacks, and whose peritoneum presents substantial adhesions, is likely to be attended with better results than when the peritoneum is found to be wholly undisturbed. In advanced cases of appendix trouble the disproportion which is often noted between the constitutional disturbance and the local condition discovered at the operation appears to be capable only of the same explanation. In looking over the records of laparotomy performed for perforations in the stomach or bowel it is impossible not to be struck with the fact that, in many of the successful cases, there had been long antecedent visceral or peritoneal trouble.

CLINICAL SOCIETY OF LONDON.

Myeloid Sarcoma of Radius.—Rheumatic Nodules in Adult.—Non-spinal Idiopathic Muscular Atrophy.—Modified Excision of Elbow for Tuberculous Disease.—Thoracoplasty.—Paraplegia following Typhoid Fever.—Thrombosis in Pons Varolii.—Endosteal Sarcoma of Radius.—Nephrectomy for Malignant Disease in a Child.

A CLINICAL meeting of this society was held on Jan. 26th, the President, Mr. HULKE, being in the chair.

Mr. CLUTTON showed a man who had undergone Resection of the Lower End of the Radius, with the corresponding part of the Ulna, for Myeloid Sarcoma of the former bone. The case was the second related in the paper, of which an abstract is given below.

Dr. SIDNEY PHILLIPS exhibited a man aged forty who came under his care in November, 1893, with Rheumatism about the Wrists and Ankles. The man had had acute rheumatism four years before and had had slighter attacks since. There was no endocarditis. There was a subcutaneous nodule over the upper end of the right ulna of about the size of an almond. There was a second nodule of the size of a pea over the opposite ulna, and a third close to the second. These nodules were rare in adults, and in children they were usually associated with endocarditis. The case proved refractory to salicin, but had much improved under quinine.

Dr. PENROSE and Mr. TURNER brought forward a man aged twenty-one as a typical instance of the Non-spinal form of Idiopathic Muscular Atrophy. The patient was born in America, had lived there till the age of sixteen, and had wandered about in caravans. There was no family history of nerve trouble. When aged twelve he had a short illness, and during the next three years he was much exposed to wet. When nearly seventeen he first complained of weakness of the back; later this extended to the arms, and two years afterwards to the legs. His condition had remained stationary for the last three years. The wasted muscles showed no reaction of degeneration and gave but slight response to galvanism or faradaism. The infra-spinatus and the muscles of the flexor group of the forearm were larger than natural. There was no change in sensation and no ankle-clonus.—Dr. JAMES TAYLOR said that the case was of interest in that three nervous conditions were present—viz., pseudo-hypertrophic muscular paralysis, idiopathic muscular atrophy, and the condition known in France as the Landouzy-Dejérine disease, the facio-scapulo-humeral type of muscular atrophy. Erb had shown that the whole of these affections were but varieties of muscular dystrophy.—Dr. ORMEROD asked whether the lordosis was due to weakness of the muscles of the back or of the abdomen. The saddle-shaped back suggested a resemblance to the condition described by Duchenne as due to paralysis of the abdominal muscles. He agreed that the three diseases mentioned by Dr. Taylor were varieties of the same affection.—Dr. PENROSE, in reply, said that he regarded the spinal curve as due to weakness of the muscles of the back.

Mr. EVE showed a patient on whom he had performed a Modified Excision of the Elbow for Tuberculous Disease. The modification consisted in the preservation of the olecranon. Two lateral incisions had been made, one on each side of the joint, and he claimed that loss of extension was avoided by this method. In three cases he had divided the olecranon transversely and afterwards united it by wire, but in only one was the result satisfactory.

Mr. PEARCE GOULD showed a boy, now aged sixteen, whom he had seen, when aged nine years, at the Royal Chest Hospital. Two years previously to that an empyema had burst through the chest-wall in two places, and on admission he was in a very weak state with a copious discharge of pus, enlargement of the liver, and albuminuria. In March, 1887, Thoracoplasty was performed, and the greater portions of the second to the sixth ribs on the left side were removed. The lad was unable to do hard work, but otherwise was fairly well. He complained of pain in the shoulder of the affected side. The albumen had completely disappeared from the urine.

Dr. MOTT showed a man aged twenty-two, the subject of Paraplegia after Typhoid Fever. He suffered from enteric fever eight years ago and was ill for two or three months and afterwards was unable to stand or walk. He had great exaggeration of his superficial and deep reflexes and ankle clonus was present. There was but little affection of the sphincters, though there was some difficulty in retaining the urine. There was no loss of sensation. He thought, on the whole, that the lesion was a focal myelitis, a transverse lesion, perhaps spreading from a patch of meningitis. He also showed a man aged thirty-six, a musician, who while amusing his friends at the piano became suddenly faint. He was given some water to drink, but it returned through his nose, and he was then found to be unable to walk or use his hands. He had been in hospital for six weeks and was treated by inunction of mercury and fed by means of a tube. The reflexes were exaggerated, and there was paralysis of the upper part of the face. The lesion was in the upper part of the pons and was either a hæmorrhage or a thrombosis.—Dr. HALE WHITE mentioned a case which was equally sudden in onset and which was thrombotic in origin.

Mr. H. H. CLUTTON read a paper on three cases of Endosteal Sarcoma of the Radius. The first case was that of a myeloid sarcoma of the head and neck of the radius in a man aged twenty-eight, who had noticed a swelling for two years. The tumour was successfully removed by resection of the upper third of the radius. He died eighteen months after operation from kidney disease, but without any local evidence of a return of the new growth in the radius, and in the meantime his arm and hand had been useful and free from pain. The second case alluded to above, in a man aged fifty-eight, was that of an endosteal growth of the lower end of the radius, which was subsequently proved to be a myeloid sarcoma. It was treated by resection of the part affected. A

corresponding portion of the ulna was removed at the same time in order to avoid any lateral deviation of the hand. He had now a very useful hand and with a gauntlet could hold a pot of paint weighing nine pounds. He was a painter by trade. The third case was that of a round-celled sarcoma of the lower end of the left radius in a woman aged thirty-four. The history was of nine years' duration, but the tumour was thought to be parosteal or periosteal and was therefore removed by amputation. The specimen showed that it was an endosteal growth and might possibly have been successfully removed by resection without the loss of the hand; but, considering its microscopical character, it was, on the whole, more satisfactory that amputation had been performed. She had had no return of the disease.—The PRESIDENT asked Mr. Clutton whether he could lay down any data by which it could be judged whether the tumour was of such a nature as to be removed by erasion.—Mr. GOULD said that the malignancy of endosteal sarcomata varied within very wide limits. He remembered an instance of endosteal sarcoma of the thigh under the care of Mr. Berkeley Hill. It was removed, and there was no recurrence *in loco*, but secondary growths were afterwards found in the brain, the spinal cord, and all the viscera; this, of course, was not the rule in myeloid sarcoma. He asked whether there was any advantage in removing more of the bone than the part immediately adjoining the growth, and whether it might not in other cases be sufficient to open the shell and scrape out the growth, thus leaving the whole length of the bone.—The PRESIDENT added that he remembered seeing a case of sarcoma of the lower jaw in a young woman aged twenty-five, expanding the bone. The patient refused to submit to excision, and so he opened the shell and gouged out the growth. Some time later he again scraped out a recurrence. Five years had elapsed since the last operation, and the patient was at present free from recurrence. He referred to another case of sarcoma of the upper jaw in which there was no local recurrence till ten years after removal of the primary growth.—Mr. SYMONDS asked why both bones had been removed instead of retaining the ulna. He had treated a myeloid sarcoma of the upper jaw in a girl aged eleven by scraping away the growth, and there was no recurrence after a lapse of ten years.—Mr. EVE said that a point in the diagnosis of these cases was that the less malignant myeloids expanded the bone regularly, whereas the more malignant ones burst through the wall of the bone here and there.—Mr. CLUTTON, in reply, said that neither pulsation nor crackling was present in these cases. He regarded the length of time the tumour had existed as the most valuable aid to prognosis. The longer the tumour existed the longer the patient existed, as a rule. A case of spindle-celled sarcoma of bone, in which removal had been practised eight years ago, remained well at the present time.—Mr. BLAND SUTTON desired to add a remark from an anatomical point of view. If the ulna were removed and the radius left, the result was good as to usefulness of the hand, but if the radius were taken away and the ulna left the hand was commonly useless, and he therefore held that the practice Mr. Clutton had followed was based on sound anatomical principles.

Mr. MALCOLM related a case of Nephrectomy (successful after fourteen months) for Malignant Tumour in a patient twenty-three months old, of good family history, strong, and well developed. She was said to have had a "full belly" when she was a year old, and a definite "lump" in her side had been noticed six months later. This lump had steadily grown till it formed an elastic, oval, well-defined tumour, painless, and scarcely, if at all, movable. It filled the right loin, extending well down towards the pelvis and just beyond the middle line below the umbilicus. The child was slightly anæmic, but her general health was good, and there was nothing abnormal in the urine. On Nov. 15th, 1892, the abdomen was opened through the right linea semilunaris, the kidney on the other side was examined and found to be apparently healthy, and the tumour was removed through an incision in the posterior layer of the peritoneum immediately to the outer side of the ascending colon, which passed in front of the growth. The greatest care was taken not to open the capsule of the kidney, which also included the tumour, but some of it was inadvertently separated during the enucleation of the deeper part. When the growth was got out of the way the remaining shreds of its capsule and a mass of glands and fat surrounding the right renal vessels were also carefully removed. The divided end of the ureter was brought outside the skin, and the wound was closed without drainage. During convalescence the highest temperature and pulse, namely, 101° F. and 144° respectively, were recorded on the day after the operation. By the end of a week the fever was practically gone. The wound healed well, and, except for the presence of a little albumen in the urine during the first night, there was nothing of importance to record. A year later the urine was examined, and nothing abnormal was detected in it. On Jan. 25th Dr. Marshall of Barnes reported that the child was in perfect health. The tumour was of oval shape and measured 6 in. by 4 in. The posterior half of the kidney substance was apparently healthy; the anterior half was partly replaced by, and partly expanded for a short distance over, the new growth. The tumour was described by Mr. Targett as a "malignant adenoma," separated from the kidney by a capsule of dense fibroid tissue and consisting of tubes lined by epithelial cells with a scanty and exceedingly delicate stroma, but with strands of connective tissue dividing the field into large loculi. Examination of the glands by Mr. Targett and Dr. E. M. Callender did not show conclusive evidence of secondary deposit in them. Mr. Malcolm then referred to the statistics of the operation as showing that he might well have expected an unfortunate result and, with regard to the histology, decided, in contrariety to the classification in Mr. Bland Sutton's recent book, not to describe the growth as a connective-tissue neoplasm.—On the motion of Mr. BLAND SUTTON, who urged that the subject was too important to be disposed of in a few minutes, the discussion was postponed until the next meeting.

OPHTHALMOLOGICAL SOCIETY.

School Ophthalmia.—Exhibition of Specimens.

AN ordinary meeting of this society was held on Thursday, Jan. 25th, the President, Dr. ARGYLL ROBERTSON, in the chair.

Mr. HUTCHINSON read a paper on School Ophthalmia. He dwelt upon the frequency of the occurrence of the disease and its epidemic nature, and he alluded to its recent appearance in middle-class schools. The inflammation was of a mild type, and the congestion was slight, but in some cases it was followed by granular lids. In some schools as many as 50 per cent. of the children were affected. A papillary condition of the conjunctiva followed, there being but few instances of true sago grains. The condition resisted treatment and spread from the sick to the healthy. It occurred under circumstances where no gross hygienic faults could be found and where there had been no previous attacks. One instance was reported in which the disease had spread in the family to which one of the pupils had returned during the holidays. The malady spread so rapidly that in one school in which 5 per cent. of the pupils had been affected in September there were 40 per cent. in October and 50 per cent. in December suffering from the affection. Boracic acid had been used for the eyes and great care exercised in connexion with the lavatories and general hygienic arrangements. It was stated, however, that the upper eyelid had not been everted in applying the remedy. Many families had been attacked in the town, among them being those who had entertained the boys belonging to the school. In a workhouse school, of 310 children fully one-third suffered from the disease. The diagnosis of early and slight cases of granular lids was difficult, and it was therefore advisable to treat all doubtful cases, not waiting for the development of true sago grains. Mr. Hutchinson contrasted the condition with catarrhal ophthalmia, the manifestations of which were very obvious, and the duration of which was only from seven to ten days. There was no photophobia, and the malady was not so widespread, though it occurred as family ophthalmia. It was distinct from coryza. Surgeons did not contract the disease from their patients, but it appeared to spread especially in bedrooms and more particularly between individuals occupying the same bed, suggesting the influence of defective ventilation, direct contact, or possibly the intervention of flies. In one school, servants employed in the bedrooms were attacked, those occupied downstairs escaping. It appears as though a specific contagium conveyed the disease from patient to patient, and from family to family. Trachoma was not necessarily a part of the ocular disease. Sporadic cases were very rare and were met with very infrequently in private practice. Such cases were noticed to occur chiefly in Hebrews

and Celts, except in one instance, in which husband and wife were affected. A similar disease attacked the armies in Egypt, in Prussia and in Holland, and the discharge of Belgian soldiers so affected had been the starting points of several village epidemics. There was no predisposing influence. It seemed probable that Egyptian, military, and school ophthalmia were identical. It was a very important question as to when cases of granular lid ophthalmia might be allowed to go free. In some cases the disease showed no tendency to spread, but in most it was otherwise. Persons affected were incapacitated from work, reduced to semi-isolation, and deprived of the power of reading. Few eyes were lost. Mr. Hutchinson proposed separate schools, in which oral instruction should be provided, the treatment required being isolation and the application of mercuric chloride or silver nitrate. It was a question whether the disease was new or had greatly increased in the middle of the present century; cases had been described by Bowman in 1858 and by Haynes Walton in 1861.

Dr. SYDNEY STEPHENSON stated that of 11,000 children in the metropolitan schools 4000 required treatment for ophthalmia four years ago. At this time an isolation school for one district to contain 400 children was erected, and he was put in charge of it. In June, 1893, the number admitted was reduced to 100, so that children from other districts were admitted, but the space was too limited to provide for all those requiring isolation and treatment in the metropolitan area. Confusion arose from the nomenclature, and he thought it better to group all the cases together under the term "muco-purulent ophthalmia," as suggested by Mr. Nettleship. He had himself examined 14,000 children in different schools, excluding parochial schools, and he found that 94 5 per cent. showed more or less follicular bodies in the eyelids, only 4 5 per cent. being free; 0 5 per cent. showed true trachoma.

Dr. ROCKLIFFE quoted a number of cases which had come to him with a ready-made diagnosis of "follicular conjunctivitis," chiefly for corroboration or certificate in connexion with schools. All presented a granular condition of the external canthus. There was no sign of irritation of the eye, and no asthenopia or photophobia.

Mr. NETTLESHIP thought that perhaps unnecessary alarm had been caused by the discovery of such widespread affections of the lids. He did not consider there was a serious amount of disease of the lids in the higher-class schools, and the symptoms were for the most part extremely mild. Much of the apparent increase of disease in this, as in other cases, was due to the higher standard of health now looked for and by the more systematic examination carried out discovering cases which were formerly overlooked. It was often very difficult to say whether the lids were quite healthy or not; the most reliable sign, he thought, was the presence of a slight sticky discharge, but its presence was variable.

The adjournment of the discussion was proposed by Dr. ROCKLIFFE and seconded by Mr. JULER, and carried.

The following living and card specimens were shown:—

Dr. ERNEST CLARKE: Congenital Pulsating Exophthalmos in a child.

Dr. E. C. KINGDON: Symmetrical Changes in the Macula Lutea in an infant.

OTHER METROPOLITAN MEDICAL SOCIETIES.

EPIDEMIOLOGICAL SOCIETY.—A meeting of this society was held on Jan. 17th, Dr. J. F. PAYNE, President, being in the chair.—Dr. J. C. MCVAIL delivered an address on the Aerial Convection of Small-pox from Hospitals, which we publish in full at p. 247 of our present issue.—Dr. COUPLAND had visited eight or ten towns in the northern counties, and in some of these he was informed of an excessive incidence of small-pox in the vicinity of the hospitals; but whether this was ascribed to aerial or to personal agencies seemed to depend mainly on the bias of the observers. Certainly in no small proportion the cases thus arising could not be directly traced to previous contact with small-pox. He referred especially to facts favouring the aerial view in the recent outbreaks at Oldham, Chadderton, Bradford, and Leicester. The alternatives of personal conveyance and of the carrying of contagium by flies were alluded to by Dr. Priestley in a note on the New Found Pool outbreak at Leicester.—Dr. SAVILL said that when, during the recent epidemic at Warrington, the small-pox patients were removed from the old to the new hospital the incidence of the disease on the outside population seemed to follow the change; but while, on the one hand, it bore no relation to the distance from the hospital or to the prevailing winds, there was ample evidence of human agencies, the hospital regulations being lax, and no fewer than sixty-seven cases in the district not being isolated at all. Adjoining the old hospital was the workhouse with 700 inmates, many of whom were unvaccinated and equally exposed to aerial influences; but there was only one primary case, a child, and seven others directly traceable to it. Again, close to the new hospital there was a large brewery where 364 men were employed, among whom a few cases appeared in September, but only four days after the hospital was opened, and therefore unconnected with it; there were also ironworks close to it, between which and the hospital were open gates affording every facility for intercommunication. Here the incidence was heavier until arrested by the revaccination of the men in November.—Dr. SWEETING said that the regulations enforced at Fulham when patients suffering from small-pox were admitted were of the strictest character, and intercommunication between the parts of the building was superseded by the telephone. Almost all the fever cases were revaccinated, but of the six or eight that were not all contracted small-pox. The further discussion of the address was adjourned to Jan. 31st.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—A meeting of this society was held on Jan. 15th, Dr. WOODFORDE, President, being in the chair.—Dr. ARMSTRONG, opening a discussion on the Dissemination of Disease by Vagrants, stated that, small-pox having been on several occasions during the past two years introduced into common lodging-houses and casual wards in Newcastle by tramps, he had addressed a circular note to the medical officers of health of the larger towns throughout the country, and from their replies to a series of questions, as well as from the returns of the Local Government Board, it appeared that the first case of small-pox occurred at Dewsbury, being followed by others in London, Birmingham, Bristol, and Liverpool in May, 1891, and by December fifteen towns had been attacked. Of the eight from whom replies had been received all but one stated that infection had been conveyed by tramps. The disease spread until in May, 1893, it reached its climax of 360 cases per week, 108 of the 117 notifying urban districts having been invaded, and the total number having reached over 5600. Of the 63 medical officers of health who replied to Dr. Armstrong, 37, or nearly 60 per cent., stated that their towns had been infected by tramps, the casual wards and lodging-houses serving as foci, until in Halifax and Warrington the cases within the first year increased to 360 and 598 respectively. The professional tramp was not a poor man wandering in search of work, but an idle, worthless vagabond who lived on the public, and whom they had a right to restrain from inflicting serious harm on the community.—Mr. SERGEANT said that during the two years 1892 and 1893 there had been 1612 cases of small-pox reported from 21 boroughs and 64 urban and 19 rural sanitary districts in the administrative county of Lancaster. In 40 per cent. the introduction of the disease was ascribed to tramps, who, as soon as a case was detected in a ward, dispersed, carrying infection in all directions. Section 83 of the Public Health Act was useless, and nothing short of a ticket-of-leave system, medical inspection of casual wards and lodging-houses at all hours, and permission for the officers of the police and sanitary authorities to detain any lodger for inspection, revaccination, disinfection or quarantine if required, would suffice for the protection of the community from a grave and standing danger.—Dr. WHITELEGGE doubted the efficacy of registration, but attached great importance to detention, though not in workhouses. In Yorkshire the sanitary authorities had appropriated common lodging-houses for isolation purposes, but they had been surcharged.—Dr. NEWSHOLME thought that in small-pox, disinfection of the person and his clothing, with revaccination, rendered further detention needless.—Dr. PARKES deprecated detention &c. as interfering with personal liberty, preferring a system of registration and inspection, with tickets to be endorsed at each place of stay.—Dr. SYKES maintained that they should not be influenced in their demands by considerations of expediency, and observed that at St. Pancras the medical officer of the workhouse made a careful examination of every casual on admission, and that many infectious cases had been thus discovered in time. He complained that with vagrants, as with itinerant milkvendors, procedure by summons was useless, and more summary powers

ought to be obtained.—Dr. REID insisted on the necessity of admitting the officers of the sanitary authority at night, for the police were concerned only with the detection of criminals.—Mr. SERGEANT thought that the difficulty of defining and registering tramps and vagrants was far less than some supposed, for their features, histories, and characters were already well known to the police—at any rate, in the provinces; but since many avoided lodging-houses, sheltering in barns and hedges, the power of detention should be extended to any "public place."—Dr. WOODFORDE thought this a most important suggestion, for hawkers visiting fairs were active disseminators of disease, though in Berkshire their caravans were visited by the inspector on taking up their position.—Dr. ARMSTRONG believed that it would be wiser to limit their demands for detention to cases in which the person was himself a source of infection, leaving to some future time the treatment of such as had merely been exposed thereto, except, perhaps, as regards small-pox, when, as Dr. Newsholme and Mr. Sergeant had shown, revaccination would generally be submitted to for a very trifling consideration.—Resolutions proposed by Dr. ARMSTRONG and Mr. SERGEANT, and amended in the course of the discussion, were then adopted with the view of being laid before the Local Government Board as the basis of a system of regulations to minimise the dissemination of disease by vagrants by compelling them to report their movements and by empowering the local authorities, as they thought fit, to detain them for disinfection or quarantine; in times of epidemic to medically examine all persons on admission to casual wards and common lodging-houses; and to detain for medical examination "any vagrant found in any public place."

PROVINCIAL MEDICAL SOCIETIES.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—At the meeting on Jan. 24th Dr. ROBERT POLLOK occupied the chair.—Drs. LINDSAY and JARDINE showed Two Anencephalous Fœtuses. Dr. Jardine read his report of the year's work at the West-end Branch of the Maternity Hospital. At the beginning he remarked that it was a matter of regret that no medical report of the Maternity Hospital had heretofore been issued. The report gave details of 583 cases which had been attended at the hospital. There were 540 deliveries at full time, twenty-five were premature, and there were eighteen abortions. The circumstances attending the respective classes of cases were summarised, and noteworthy features were specified.—In the discussion which followed the reading of the report Professor CAMERON said that it was impossible to separate the placenta all round in placenta prævia. If the edge could not be reached it would be necessary to burrow through to the inner membrane and turn by the bipolar method, then puncture, and draw a foot down as soon as possible. He maintained that any general practitioner should be able to measure a contracted pelvis. Eclampsia was the only thing he was afraid of. Face cases should be rectified, if seen early, by drawing the occiput down and rotating the head and body into another diameter. He believed that some contraction in the lower part of the uterus caused the extrusion of the head.—Dr. GUNN related a case of a Primapara who had developed unmistakable scarlet fever on the fourth day. She had been exposed to infection eight days before. He thought she died of peritonitis set up by the scarlet fever. Other speakers followed.

MANCHESTER MEDICAL SOCIETY.—Dr. DIXON MANN presided at the meeting held on Jan. 24th, when the following cases were brought under consideration.—Mr. G. A. WRIGHT showed two cases of children in whom he had removed the astragalus and erased the ankle-joint by the anterior transverse incision recommended by Mr. Holmes. The patients could walk well, the feet were sound and not unshapely, and there was some mobility. Mr. Wright remarked upon the uncalled-for condemnation of such operations by many even modern authorities, and pointed out that by this operation, or by tarsectomy in more extensive disease, the operations of Syme and Pirogoff had been in his practice almost entirely superseded. The two children shown had been walking upon the affected feet for eighteen months and three months respectively.—The subject of Expiratory Stridor in Thoracic Aneurysm was introduced by Dr. THOMAS HARRIS, who exhibited a man fifty-five years of age, who for the last three months had had shortness of breath, and in whom a deep expiration was accompanied by marked stridor; the inspiration was also very slightly stridulous. Two months ago the same features were present during quiet respiration, but recently the patient had much improved, and now the noisy breathing was only present when he breathed deeply. Dr. Harris called attention to the misleading nature of these cases. It was rare to meet with cases of marked expiratory stridor, and one was apt to think before a careful examination of such cases was made that the stridor was of laryngeal origin. The larynx of the patient exhibited to the society was a perfectly healthy one, and presented no paralysis of the abductor or other muscles. The man showed very well marked tracheal tugging, also very slight pulsation over the manubrium sterni, which was only visible at the end of expiration, and a markedly accentuated second aortic sound. Dr. Harris also mentioned two other cases of expiratory stridor which he had seen and followed to the pathological department. In both cases a sacculated aneurysm of the aorta was found, which markedly compressed the trachea. The present case seemed to be due to a similar condition. He thought the cause of the expiratory stridor was probably a consequence of the aneurysm being so placed that greater pressure was exerted on the trachea and greater stenosis caused during expiration than during inspiration.—Mr. ANDREWS then reported a case of Purpura Hæmorrhagica which ended fatally. The patient was a young man twenty-two years of age, and the illness ran a rapidly fatal course in nine days. The chief symptoms were the occurrence of numerous crops of purpuric spots all over the body and in the mouth, acute epistaxis, profuse hæmoptysis, retinal hæmorrhages, vomiting, left-sided pleurisy, probably due to extravasation of blood, and high fever. He was treated with ergot, turpentine, iron, and arsenic, together with stimulants and ice, locally and internally. The right nostril was plugged posteriorly and, eventually, intravenous injection of saline fluid was employed, but without any improvement. An interesting point in the case was the history of a somewhat similar illness four years previously.—At the conclusion of the sitting Dr. R. B. WILD gave a short account of a number of experiments upon the Deodorising and Disinfectant Properties of Charcoal. Various fresh and putrid organic fluids were submitted to the action of charcoal of different kinds and in various proportions, the results showing that wood charcoal was an effective deodoriser, whether dry or thoroughly rubbed up into a paste with distilled water; purified animal charcoal was much inferior and ordinary animal charcoal was almost inert. In preventing putrefaction of a fresh meat broth wood charcoal in the proportion of 1 to 4 of the fluid was only partially successful in removing the smell, the growth of organisms being unaffected. Smaller proportions of charcoal were quite inert. Inoculation experiments upon agar and nutrient gelatine showed that charcoal had no influence whatever upon the vitality of putrefactive germs; a putrid fluid completely deodorised by charcoal gave when inoculated cultivations exactly similar to those obtained from the same fluid without the charcoal. Charcoal obtained from ordinary bottles always contained germs, and when introduced into a gelatine tube fungi and other organisms were obtained, so that it was necessary to carefully sterilise the charcoal before its disinfectant properties could be tested.

MIDLAND MEDICAL SOCIETY.—A meeting of this society was held on Jan. 17th, the President, Mr. A. H. EVANS, being in the chair. The evening was devoted to the exhibition of specimens.—Dr. E. WOOD WHITE showed for Mr. Boscomb two large intestinal calculi removed from the intestines of a horse. The large one had proved fatal from intestinal obstruction.—Dr. MALINS brought forward a spleen weighing 2lb. 5oz., removed on Jan. 2nd. The patient, aged thirty-two, was admitted to the General Hospital on Jan. 31st with an abdominal tumour reaching mainly from the right hypochondrium to the left of the pelvis, some peritonitis, a high temperature, and quick pulse. The abdomen was opened in the middle line, and the tumour was found to have been produced by the spleen being twisted for half a revolution on its axis; the vessels on the distal side were thrombosed, and the spleen was discoloured and congested. A single silk ligature was tied round the proximal side of the obstruction, and the spleen was removed. The patient recovered without bad symptoms and left the hospital at the end of three weeks.—Mr. GEORGE HEATON showed a Uterus removed by Porro's operation for rupture during labour. The patient, a multipara aged twenty-five, was admitted into hospital in labour, with a large rent in the uterus, through which the fœtus had escaped into

the abdominal cavity. Abdominal section was performed, and as free hæmorrhage was still taking place from the rupture the uterus was brought out of the abdomen and clamped round its neck with a wire clamp. The body of the organ was excised, the abdomen was flushed out, and the stump of the uterus treated in the usual manner. There was no more hæmorrhage, but the patient died of shock. The specimen showed a rent on the right side of the uterus, anteriorly, six inches in length.—Dr. DOUGLAS STANLEY showed two specimens of Aneurysm. The first was taken from a man aged thirty-four, who was brought into hospital dead, having fallen down suddenly. There was no hæmoptysis or other external appearance of hæmorrhage. The aneurysmal sac was found occupying the arch of the aorta and embedded in the apex of the left lung. A distinct orifice about the size of a shilling was found between the aorta and the sac. There had been rupture through the lung tissue into the left pleural cavity. The other organs showed evidence of syphilis. The second specimen was from a man aged forty-eight, who was admitted into hospital complaining of pain in the precordial region and of shortness of breath. On physical examination the cardiac impulse was found to be feeble, but was best marked in the sixth left interspace, three-quarters of an inch externally to the vertical nipple line. There was general increase of the precordial dulness, but no murmur could be heard. Post mortem an aneurysm about the size of an orange was found, situated in the left ventricular wall, close to the septum. The wall of the sac was formed by endocardium, some fibrous tissue epicardium, and parietal pericardium, this latter being adherent to the epicardium. In the interior there was some laminated blood-clot.—The reading of a paper by Mr. JORDAN LLOYD concluded the business of the sitting.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting was held on Jan. 17th, Dr. W. HUNTER, President, being in the chair.—Dr. HUNTER, for Dr. STEWART, read a paper on Eustachian Obstruction. The most prominent symptom of this affection was stated to be deafness, which might be temporary or permanent. Its chief causes were: catarrh of the middle ear, which might be dry, mucous, or suppurative; vegetations in the naso-pharynx, or polypoid or other obstruction of the nose. Stress was laid on the frequency with which ear troubles followed the zymotic diseases, especially scarlet fever. The diagnosis of the various causes of Eustachian obstruction was described, and also its treatment by the catheter, bougies, inflation, nasal washes, sprays, and gargles. For vegetations Dr. Stewart preferred to have the patient lightly anæsthetised and to remove the growths by the curette.—A discussion followed, in which the following gentlemen took part: the President, Dr. Cattle, Mr. Gibbs, Mr. Belcher, Dr. Watson, Dr. Tew, Mr. Wood, Dr. Blurton, and Dr. Heelis. Several speakers referred to the value of nitrous oxide gas in place of chloroform as an anæsthetic during the operation for adenoid growths.—Dr. CATTLE showed for Mr. ANDERSON a box containing Seventy-six Gall-stones removed by Cholecystotomy from a man aged fifty-five. He had had numerous attacks of biliary colic, but had not had jaundice, nor could the gall-bladder be felt by palpation. The patient made a good recovery.—Dr. CATTLE also showed for Mr. ANDERSON a Mulberry Calculus weighing ten drachms, removed from the bladder of a youth aged nineteen by lateral lithotomy. Notwithstanding that the stone was so rough and heavy, the symptoms caused by it were very slight. The patient was discharged well three weeks after the operation.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—At a meeting of this society held on Jan. 18th Mr. RICHARD FAVELL presided. The following specimens were shown:—The PRESIDENT showed a Multilocular Ovarian Cyst removed from a woman two and a half months after her confinement. The tumour was felt after the expulsion of the placenta and child, in the middle line above the pubes. The puerperal period ran a natural course.—Dr. PORTER showed for Mr. C. ATKIN specimens from a case of simple Ulcerative Leucorrhœa.—Dr. HUNT showed a specimen of Cancer for which he recently performed excision of the tongue.—Dr. ARTHUR HALL showed microscopic sections of Adenoid Cancer of Rectum; also a Liver with Perihepatitis.—Dr. WATERS showed the Uterus and Lungs from a case of puerperal fever; and Dr. BURGESS brought forward a Brain with recent blood-clots in the ventricles.—Mr. SNELL then introduced a boy aged twelve, the interesting feature of whose case was the small field of vision, the perimetric chart showing that it was confined almost to the point of fixation. It had existed for years, but the lad had nevertheless pursued his studies very successfully. The discs were white and suggested antecedent neuritis. There appeared to have been meningitis in infancy. The case raised the interesting medico-legal point as to what could be done not only in near work, but in walking about easily with such a very restricted field.—Mr. PYE-SMITH showed a young man whose left eye had been penetrated a month previously by a chip of steel from a hammer with which he was striking. The chip had gone through the cornea, iris, and the edge of the lens on the inner side of the eye, and had struck and perhaps passed through the sclerotic at the equator on the inner side, where a white scar was now visible. $V = \frac{1}{18}$.—Mr. LOCKWOOD gave particulars of a case of Fracture of the Larynx and showed the specimen. Mr. Lockwood also read the notes of an unusual case of Obstructed Labour.—Dr. SINCLAIR related particulars of a case in which he had removed the Vermiform Appendix for Relapsing Appendicitis. The patient was a young woman aged twenty-two years. Her first attack occurred in December, 1892. During the succeeding four months she had three relapses, each of which appeared on attempting to take solid food. She was operated on in May, 1893. The appendix was very much thickened and its apex adherent to a coil of the ileum deep in the pelvis. There were no concretions or pus. The patient made a good recovery and had returned to her situation.

Reviews and Notices of Books.

A System of Practical Therapeutics. Edited by HOBART AMORY HARE, M.D., assisted by WALTER CHRYSTIE, M.D. Vol. II. Edinburgh and London: Young J. Pentland.

THE second volume of this work, like the first, includes but one English contributor, the majority of the writers being drawn from Philadelphia. The account of Syphilis from the pen of Dr. R. W. Taylor, as one of the diathetic diseases, was apparently crowded out of the first volume; otherwise the volume under notice deals with Fevers, Diseases of the Respiratory, Circulatory, and Hæmatopoietic Systems, and with Diseases of the Digestive System. The article on Syphilis gives an excellent criticism of the so-called abortive plan of treatment, and the author maintains with much emphasis his view that a man with syphilis has the greatest chance of being cured by the "old-time vigorous six months' mercury and three months' iodide treatment." He also expresses himself strongly in favour of the hypodermic use of mercury, although he protests against any routine treatment. Scarlet Fever, Measles, Rötheln, and Varicella receive adequate treatment at the hands of Dr. J. Lewis Smith. Under the heading of Small-pox, Dr. W. M. Welch makes the suggestion that in the absence of a statutory law requiring vaccination much may be done to check the spread of the disease by restricting the privileges of unvaccinated persons. He suggests, for instance, the exclusion of the unvaccinated from public and private schools, as well as from the army or navy, and he is also in favour of preventing the unvaccinated immigrant from landing until vaccination has been satisfactorily performed. The section on Typhoid Fever largely deals with matters of ancient history, but the account is brought fairly up to date. The same remarks apply to the sections on Typhus Fever and Malarial Diseases. The article on Yellow Fever by Dr. James Cochran includes not only the author's experience of this interesting disease, but also that of several other physicians from the Southern States, and it is valuable for the account of the clinical features as well as the treatment. A short article on Cerebro-spinal Fever follows, and then, in greater detail, Diseases of the Nasal Chambers and of the Pharynx and Larynx are dealt with by Dr. Seiss and Dr. C. Z. Sajous respectively. The long list of remedies employed for Diphtheria is not particularly cheering, and the extreme brevity of the article on Whooping-cough is accounted for by

the remark that "the treatment of whooping-cough remains still in the stage of empiricism," and, further, that "young practitioners find specifics in every new remedy." Efficient chapters on the various Diseases of the Respiratory Organs bring into due prominence the most recent advances, but the remarks upon the treatment of Pneumothorax seem rather too sanguine.

Dr. W. H. Thomson writes upon Acute and Chronic Organic Diseases of the Heart. He objects to the term "ulcerative endocarditis" as not sufficiently wide to cover all cases of "malignant endocarditis." Nervous Diseases of the Heart are in the charge of Dr. Lauder Brunton, who has much that is interesting to say. Dr. F. C. Shattuck deals with Diseases of the Bloodvessels and of the Blood; Dr. Musser with Diseases of the Liver, Gall Bladder, Hepatic Ducts, and Spleen. Recent Monographs upon Diseases of the Thyroid Gland and upon Exophthalmic Goitre are summarised by Dr. R. C. Norris. Although free use has been made of recent literature the account of Affections of the Tongue appears somewhat inadequate to the importance of the subject. Diseases of the Stomach, including Acute and Chronic Gastric Catarrh, Gastric Ulcer, Gastric Cancer, and Gastric Dilatation afford Dr. D. Stewart scope for a very full and practical account which teems with hints that appear to have been drawn from practical experience. Of the remaining sections in this second volume the most full and detailed is that upon Diseases of the Rectum and Anus, by Dr. C. B. Kelsey, who argues ably in favour of inguinal colotomy, and does not hesitate to enumerate the difficulties that may be encountered in performing this operation.

A Contribution to the Pathology of the Vermiform Appendix. By T. N. KELYNACK, M.D. London: H. K. Lewis. 1893.

THIS is an excellent monograph on a subject that has within the last decade received much attention in the medical world, with the result that opinion has been revolutionised and a decided advance has been made in diagnosis and treatment; for it is now well recognised that the vermiform appendix is remarkably prone to inflammation, that the signs and symptoms hitherto attributed to inflammation of the cæcum itself are probably in most, if not all, cases due to lesion of this vertigial structure, and that the issues of such a lesion are perilous and varied. The terms "typhlitis" and "perityphlitis" have given way to the less euphonious and more barbarous term "appendicitis," the only merit of which is that it fixes attention upon the real origin of the inflammatory troubles. The variations of result of the implication of the appendix depend partly on the severity of the inflammatory process, and partly on the size, extent, and relations of the appendix itself. Often the lesion is comparatively slight and transient; the acute symptoms so familiar in the classical descriptions of "typhlitis" subside under rest and medical treatment, but the attacks are prone to recur, just as the subject of tonsillitis is prone to recurrence of that malady. On the other hand, the inflammation is more severe and persistent; it may be associated with the presence of a concretion of fæcal matter (probably often found secondarily to the catarrhal process), and the walls of the appendix may necrose, the result being a localised peritoneal abscess or, less commonly—according to the relations of the appendix—a subperitoneal abscess, the presence of which is fraught with danger; or the process is so acute and rapid that adhesions have no time to form and general perforative peritonitis is the consequence. Indeed, it is a safe assertion to make that acute general peritonitis in the young male subject is (apart from enteric fever) almost invariably due to this lesion. In view, then, of the varied consequences of inflammation of the appendix the importance of its study becomes greatly enhanced, and the value of a monograph such as that before us is inestimable.

The work is planned on systematic and scientific lines. In an introductory chapter the comparative anatomy and morphology of the appendix cæci are studied, and numerous points in its anatomy are dealt with in the following chapters. In particular the full description of the pericæcal peritoneal fossa and of varieties of the appendix itself may be cited—a clear comprehension of which is essential to the explanation of the various effects that ensue on disease of the appendix. Passing to the most common of these affections, we find that Dr. Kelynack, in spite of a half-expressed sense of its unsatisfactory character, recommends the use of the term "appendicitis" and the equally objectionable term "cæcitis" to denote the inflammatory states of the appendix and cæcum respectively; when the peritoneum is also involved he applies the name "peri-appendicitis" and "pericæcitis"; whilst to extra-peritoneal inflammation he gives that of "paracæcitis." The divisions adopted by the author of the forms of inflammation are (1) simple; (2) perforative; and (3) recurrent, and the perforative variety is further subdivided into (*a*) perforative appendicitis, with diffuse peritonitis; (*b*) perforative appendicitis, with localised peritonitis; and (*c*) perforative appendicitis with extra-peritoneal suppuration. All these topics are dealt with carefully and in detail, with many instructive cases cited in full. Chapters are also allotted to tuberculous, typhoid, and actinomycotic inflammation, as well as to other states; whilst an ample bibliography completes the work. We have no hesitation in expressing the belief that the monograph will remain for a long time the best work of reference on the subject.

The Fauna of the Deep Sea. By SYDNEY J. HICKSON, M.A. Cantab. et Oxon., D.Sc. Lond. With twenty-three illustrations. Pp. 169. London: Kegan Paul. 1894.

THIS work is one of a series of manuals published under the superintendence of Sir John Lubbock, the object of which is to popularise the results of modern science. Five of these manuals have already appeared, having been written by men who are familiar with their subjects, and the present volume may be read with interest by any ordinarily well-educated person. The idea that the abysses of the ocean were the abodes of animal life of any kind was scouted by the unscientific as well as by the scientific observer up to a very recent period. It was thought that the darkness, the cold, and the enormous pressure to which all organisms would be exposed at great depths would render life impossible, as, indeed, it proves to be for plants; but the results of numerous dredging expeditions, amongst which that of the *Challenger* stands pre-eminent, have demonstrated that there is a rich and varied fauna at the bottom of the deepest seas, and the important conclusion can be drawn from the collections obtained that, taken as a whole, it does not possess characters similar to those of the fauna of any of the secondary or even tertiary rocks, the large majority of the animals consisting of new and specially modified forms of the families and genera inhabiting the shallow waters of modern times. The different kinds of ooze, named respectively the globigerina, the pteropod, the radiolarian, and the diatom, together with the red mud which covers so large an area of the submerged land, are severally described by Mr. Hickson in considerable detail. He accepts the terms "plankton," "nekton," and "benthos" to distinguish the chief groups of animals found in the deep sea, the first representing those which, like medusæ, drift with the currents of the ocean, with but little power of altering their course; the second including most fishes which have considerable capability of locomotion; and the last

being a designation of those animals that are either stationary, like the sponges, or creep over the surface, like the mollusca. It is interesting to observe that, whilst some of the deep pelagic forms are eyeless, others have eyes of portentous dimensions, and in order to explain the use of the latter it is suggested that the shape and movements of many of these animals may be rendered conspicuous in the darkness by their phosphorescence, a property that some are known to possess in an extraordinary degree. At any rate the absence of sunlight does not interfere with the development of colour, many being of brilliant hue. The later chapters of the work are taken up with a description of the more interesting, or aberrant, forms that have been obtained not only in the *Challenger*, but in the foreign expeditions. We commend the perusal of this little volume to those who have not the opportunity of consulting the splendid volumes that are the outcome of the researches that have recently been made.

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1. *Conferenze tenute a Roma nell' Aula Magna del Collegio Romano per iniziativa della Società per l'Istruzione della Donna.* (Conference held at Rome in the Large Hall of the Roman College at the instance of the Society for the Instruction of Women.) Firenze (Florence): Civelli. 1893.
2. *L'Educazione Fisica della Donna: Discorso di chiusura delle Conferenze tenute nel Collegio Romano per incarico della Società di Educazione della Donna.* (The Physical Education of Women: Discourse of the Branch of the Conferences held in the Roman College on behalf of the Society of Female Education.) Per Angelo Mosso. Milano: Fratelli Treves. 1892.

THE first of the volumes before us contains the lectures delivered before the "Società" in 1891. These are sixteen in number, and their subjects, as well as their authors, give reassuring evidence of the reality and force of the movement they promote. We have, for instance, a finely philosophical paper by the eminent biographer of Machiavelli and Savonarolo, Signor Villari, on History, Science, and Conscience; this is followed by a beautiful study on "Virgil," by Signor Barzellotti, one of the profoundest of Danté scholars; and still higher in importance as to merit come the brilliant lectures on "Paganism and Christianity" by Signor Bonghis. These are in all respects worthy of the interpreter of Plato and the biographer of Jesus, who, amidst the demands of political life, finds leisure to maintain a high standard of Hellenic culture and to enrich philosophical literature with fresh studies and generalisations. The "Roman Legend," another of the themes discussed before the "Società," could have had no fitter exponent than the Cavaliere Rodolfo Lanciani, perhaps the most thorough, if not the most brilliant, of Italian archæologists; while, as if to correct the preponderantly humanistic tenour of the subjects, Signors Marchiori and Gasco take in hand, respectively, the "Scientific Discoveries of the Century" and "Charles Darwin." Both these lectures may be perused with profit by even British scientific readers for their lucid survey of mechanical and biological advance during the last thirty years. Hardly less worthy of note are the other discourses by writers of such special competence as Pierantoni, who contributes the "Roman Advocate," Giachi, who writes on "The Social Life of Ancient Rome" and on "Woman in the Novels of the Fourteenth Century," Fradeletto, who treats of the "Social Movement and New Literary Types," Checchi, of the "Present Mediocrity in Italian Literature," Masi, of "Jean Jacques Rousseau," and Giovagnoli, of the "Latins, the Barbarians, and the Church." This is no place for more than a mere indication of the contents of the volume under notice. We can only add a special recommendation of it in the matter of style, which from the first lecture to the last possesses the finish, the clearness, and the fascination so characteristic of the best Italian authorship.

"The Physical Education of Woman" is the subject of Professor Mosso's bright physiological study—a reprint (now, we are glad to see, in its second edition) of the lecture delivered in Rome before Queen Margherite at the time when the kindred theme of Sex in Education was dealt with in THE LANCET by Sir J. Crichton Browne. We have already reviewed Professor Mosso's positions[1] and have only to invite the reader's attention to this revised edition of a lecture so worthy in all respects of the most distinguished biologist of the Subalpine School.

LIBRARY TABLE.

Aids to the Diagnosis and Treatment of Diseases of Children (Medical). By JOHN MCCAW, M.D., L.R.C.P., &c., Physician to the Belfast Hospital for Sick Children. London: Baillière, Tindall, and Cox. Pp. 181.—Another volume has been just added to the popular "Aids" series of medical works published by this firm. The author is Dr. McCaw, who in his modest preface states that his work claims to be nothing more than a compilation, and that his aim has been to place before the student and busy general practitioner an account of the diseases of children in a concise and clear way. The small volume is well worth perusal and affords abundant evidence that the author has a sound, practical knowledge of the diseases of children, and has also made himself thoroughly conversant with current medical literature on the subject. While the book will be specially welcome to students, the busy medical practitioner will find in it many useful hints on treatment. In an appendix the author gives short directions for making such preparations as raw meat juice, whey, &c., and describes the mode of applying the wet pack, baths, forced feeding, &c.; he also furnishes a synopsis of the incubation periods of the various fevers.

Archives de Neurologie. Vol. XXVI. Numéro 81, Novembre. Paris: Bureau du Progrès Médical.—This number of the *Archives* is somewhat less interesting than usual. The principal item is, however, an important one, dealing in detail with a case of disseminated sclerosis both clinically and anatomically. A peculiar phase of its clinical history had already been described in the *Annales des Maladies de l'Oreille et du Larynx*—namely, the trembling of the vocal cords and the difficulty in phonation. Another paper deals with sexual perversion, while the reviews of the different departments are of their usual excellence.

Brain: a Journal of Neurology. London: Macmillan and Co. 1893.—The last number of this journal was chiefly devoted to Dr. Henry Head's clinical researches on the localisation of sensory disturbance and the deductions which he drew from them. The present number is an echo of the last, containing no less than three important papers having reference to the same subject. But there are other papers, on Angioneurotic Œdema, on the Minute Histological Characters of the Cortex in General Paralysis, on Syphilis of the Spinal Cord, and on Diabetic Neuritis. There are even more than the usual number of interesting clinical cases, and some abstracts of important papers and books, which make up a number of quite average interest.

Aids to Otology. By W. R. H. STEWART, F.R.C.S. Edin.—This little work, as the author states in his preface, is not intended to supplement larger works. In 105 pages is given in condensed form a *résumé* of much that is important and useful in the commoner forms of aural disease. Hints on treatment, with illustrations of the principal instruments, are here and there introduced, and the work may be of use to the busy practitioner or student who wishes to gain some insight into the subject. The fact that the book has gone through one edition shows that it is appreciated. The print,

[1] THE LANCET, May 14th, 1892, and again, at greater length, May 28th, 1892.

though small, is readable; the subjects are well arranged, and most of what is set forth is reliable for purposes of practice. For so small a work it is unusually good, and we recommend it with confidence.

The Journal of Physiology. Edited by MICHAEL FOSTER, F.R.S. Vol. XV., No. 4. November, 1893.—This part contains the following articles: 1. On the Proteolytic Action of Bromelin, the Ferment of Pineapple Juice. By R. H. Chittenden. This ferment appears to be analogous to trypsin in its action and to be associated with a proteose-like body. Part of this article is contributed by Theodore S. Hart and Theodore C. Janeway, V. Kenerson, and the late W. H. P. Bronson. 2. A Study of the Sense of Equilibrium in Fishes. By Frederick S. Lee, Columbia College, New York. This is a valuable contribution to the interesting subject of the relation of the semicircular canals to the maintenance of the equilibrium of the body. 3. Note upon one or two points in the Comparative Histology of the Pancreas. By V. D. Harris and W. J. Gow. This paper gives details of the histology of the pancreas in the monkey, dog, armadillo, guinea-pig, potto, glutton, and others, with several woodcuts. 4. On the Changes in the Number and Character of the Wandering Cells of the Frog induced by the Presence of Urari or of Bacillus Anthracis. By W. B. Hardy and Lim Boon Keng, with a plate. 5. Does the Non-coagulable Blood obtained by Injections of Wooldridge's Tissue Fibrinogen (Nucleo-Albumens) contain Peptone or Albumoses? By C. J. Martin. 6. On Some Effects upon the Blood produced by the Injection of the Venom of the Australian Black Snake (Pseudechis porphyriacus). By C. J. Martin.

The Psychological Review. Vol. I., No. 1. Edited by J. M. KEEN CATTELL (Columbia College) and J. MARK BALDWIN (Princeton University). New York and London: Macmillan and Co. Published bi-monthly.—This is, we presume, a new addition to the list of scientific periodicals. It contains contributions on psychological questions by Professors G. T. Ladd, Josiah Royce, Münsterberg, Francis Galton, and others. The recent literature of psychology receives very adequate attention. The entire contents of the number are up to a high standard of excellence.

Lourdes—Yesterday, To-day, and To-morrow. By DANIEL BARBÉ. Translated by ALICE MEYNELL. With Twelve Water-colour Drawings by HOFFBAUER. London: Burns and Oates.—This beautiful volume contains an account of the famous little town in the Pyrenees, the scene of the alleged appearances of the Virgin and of the miraculous cures said to be performed at her shrine. The account is that of a pious believer in the alleged apparitions and miracles, and the story is told in a plain, unvarnished style creditable to the writer. As regards the cure of disease, we are informed that cases of cure of phthisis, paralysis, and blindness are to be counted by thousands. Some of the records are quoted. We must be excused from entering into the maze of controversy which these assertions open up. The assumptions involved in the acceptance of these stories are enormous. The book is beautifully got up and printed.

Sanitary Work in the Smaller Towns and in Villages. By CHARLES SLAGG, M. Inst. C.E. Third Edition. London: Crosby Lockwood and Son. 1893.—This book is practically a reprint of the second edition with the addition of a reference to the Water Companies Regulation of Powers Act of 1887, and an Appendix, in which is set out Part III. of the Public Health Acts Amendment Act of 1890, relating to sanitary work. The appearance of a third edition is sufficient testimony to the favour accorded to the work, and one which we think is deserved. The book is the work of a thoroughly practical sanitarian and should continue to be in use to all engaged in hygiene.

Richard Jefferies: a Study. By H. S. SALT. London: Swan Sonnenschein and Co.—To write an adequate notice of this book a reviewer would need to be of the same psychological bias as the subject of this sketch—that is, he would have to be an ardent lover of nature, revelling in its beauties with unflagging zest, drinking in with unwearying delight impressions from the ever-varying hues of sky and landscape. Jefferies passed the closing years of his short life in agonising pain, but that season was the one in which some of his best-known literary work (and it was on the whole of conspicuous merit) saw the light. The book is called "a study," and that is undoubtedly the proper name for it. Jefferies is presented under five different aspects—as man, as naturalist, as poet-naturalist, as thinker, and as writer—in a way that will be full of interest for those who have a liking for "soul anatomy."

The Cottager's Manual of Poultry-Keeping. By W. B. Tegetmeier, F.Z.S. London: Horace Cox.—This little pamphlet, which contains the more practical part of the author's larger treatise on the profitable management of poultry, cannot fail of being useful not only to cottagers but to those of our readers who possess a poultry yard. The information contained in this manual, though condensed into a small compass, has the merit, apart from its brevity, of being thoroughly reliable, coming as it does from an admitted authority on the subject of which it treats. The hints given on the housing, feeding, and fattening of poultry, and other practical matters in this connexion, are just such as are likely to be useful to those interested in the work of poultry-keeping.

OPIUM IN INFLUENZA.

To the Editors of THE LANCET.

SIRS,—It has always seemed to me one of the most remarkable facts in the history of drugs that the value of opium as a remedy should have been so overlooked by the present generation, and its place taken by so many inferior substances. Just as opium retards nearly all the natural functions of the body, so it often at once arrests numerous morbid processes, as we have lately heard in reference to ague in the Opium Commission. There are some medical men who still cling to it at the onset of influenza, and as an example of its efficacy I quote the following extract from the Memoirs of Lucien Bonaparte. It is interesting as showing the old recognition of influenza and from the eminence of both the physician and patient. Lucien describes his being under the treatment of Corvisart in 1803, to whom he gives credit for curing him, and then adds: "Cela dit que je hâte de faire connaitre, dans le peur de l'oublier, le remède qui m'avait si vite guéri; c'était tout simplement une forte dose d'opium. Il n'est pas étonnant que son premier effet ait été celui de m'endormir; mais me guérir si soudainement et si radicalement j'en ai toujours été émerveillé."

I am, Sirs, yours truly,

Grosvenor-street, W., Jan. 27th, 1894. SAMUEL WILKS.

MANCHESTER MEDICO-ETHICAL ASSOCIATION.—The committee of this society, in issuing their report for the past year, have the satisfaction of presenting a pleasing record of the work accomplished during that period. The meetings have been well attended, and important subjects have been brought forward and well discussed, such as the "Proper Limits of Gratuitous Professional Work," "Notification," and the "Lunacy Laws." A recommendation had been made to the Select Committee of the House of Commons upon the registration of deaths and stillbirths, and a memorial had been presented to the corporation of Manchester and Salford praying that measles might be placed on the list of compulsorily notifiable diseases. Lastly, a petition had been sent to the General Medical Council asking that diplomas might be granted to midwives. The following officers have been elected for the current year: President, Dr. W. Walter; treasurer, Dr. Lloyd Roberts; secretaries, Dr. F. H. Collins and Mr. J. Ferguson.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 3, 1894.

WHATEVER may be thought of the political and economic principles underlying the enormous undertaking of the State to find isolation accommodation for the notifiable infectious diseases of London gratuitously for all classes, not only without suggestion of pauperism but without "such regulations and restrictions" as the law has provided should be made by the Local Government Board, there can be but one opinion as regards the great medical interest of the experiment. The results of this experiment are given in considerable detail in the annual reports of the Statistical Committee and of the medical superintendents of the infectious hospitals and imbecile asylums under the charge of the Metropolitan Asylums Board. The preparation of this annual volume is a work of much time, for the report for 1892 has only lately been issued. It contains much material for medical study and for general reflection. We shall to-day give our readers a few facts which strike us as being important on a cursory reading of the report. The first thing which appears prominently in the report of every medical officer is that the year 1892 was one of extreme work and pressure. It was difficult to find nurses to meet the needs of patients, or cubic space to accommodate the latter. So great was the difficulty of accommodation that the hospitals became more and more crowded, with very doubtful advantage, and in one or two cases, as we shall see, with very obvious and significant disaster. Of course, this pressure of work was accentuated on the medical superintendents, who are primarily responsible not only for the fate of individual cases but for the general administration of their hospitals. None of them appear to have suffered in the matter of infection; and their reports testify to the cheerfulness with which the enormous demands on their patience and their strength were met. Before we leave this feature of the year's work—the enormous pressure of cases—we may notice (and we do it with some surprise) a forecast of Dr. GAYTON, Medical Superintendent of the North-Western Hospital. He does not regard this pressure of cases, which we know to have extended through a great part of 1893, as at all an exceptional occurrence, but as one likely to recur; and he gives two or three reasons for his opinion—firstly, the action of the Notification Act, and, secondly, the growing popularity of the hospitals, coupled with the abolition of the relieving officer as an intermediary and all suggestions of either pay or pauperism. No doubt this latter consideration is a very powerful one. If ample and comfortable food and clothing could be prepared for comers at some store, without question and without charge, the number of applicants would soon be multiplied, and the bill the State would have to pay would be startling. The applicants would not be confined to the pauper class, and, in fact, the class of paupers would be merged in the class of the well-to-do. The excuse always advanced for this departure from sound economics is that the number of cases of infection will be controlled and diminished. With this hope, Parliament has passed a Notification Act of universal application in the metropolis with its four millions of crowded inhabitants. But Dr. GAYTON anticipates a demand for increased hospital accommodation for infectious disease. Surely this is to deny the efficacy of the Notification Act. Of what avail is notification if the number of infectious diseases is to go on increasing—if it is not, on the contrary, to be an ever-diminishing quantity? It is with this hope that the profession has supported notification and that the public have submitted to a measure essentially somewhat inquisitorial in its character. Certainly, so far, we do not seem to have experienced any such diminution of numbers. The infectious diseases have come upon us lately like a flood. Dr. GAYTON speaks of the emergency for coping with them in 1892 as being "tremendous" and as coming suddenly upon all concerned. he General Purposes Committee of the Asylums Board at a recent meeting startled a great many of the members by proposing to erect a new hospital at Shooter's Hill for about 500 patients at a cost of £220,000, being at the rate of £440 a bed. These proposals and forecasts are disappointing in the light of the Notification Act and compel us to think that either the Act is very inadequate and evasible or that it is not going to accomplish the result of curtailing the proportions of epidemics, as had been expected. We must leave this point of great public importance in order to consider some questions of considerable medical interest. One of these has reference to the occurrence of diphtheria among convalescents from scarlet fever with such frequency as to cause it to be considered by some a recognised sequela of the disease, like albuminuria. This occurred in all the hospitals in 1892 except in the North-Eastern Hospital at Tottenham. In the Eastern Hospital there were 23 cases of this kind, six of these being also complicated with measles; of the 23 cases 15 died. Diphtheria occurred in all the wards and huts in the hospital but two, and in all but two cases the malady occurred at such an advanced stage of the scarlet fever as to show that it was contracted in the hospital. Such a sequela or connexion of scarlet fever is not common in private practice; but Dr. GOODALL, who is connected with this hospital, says, in his interesting report, that during 1892 55 patients were admitted suffering from scarlet fever complicated with a condition of the throat that could not be distinguished clinically from diphtheria. In the North-Western Fever Hospital, under the care of Dr. GAYTON, 25 cases of diphtheria occurred after scarlet fever, with 8 deaths. The number of such cases is here "markedly less" than in previous years, but no explanation is forthcoming of the diminution. Dr. GAYTON had 58 tracheotomies, with 25 recoveries. There were 682 cases of diphtheria in all. In the Western Hospital diphtheria supervened on fever in 25 cases. In the South-Western Hospital, which had hitherto enjoyed immunity from this sinister complication, 18 cases occurred, with 4 deaths, under remarkable and significant circumstances, to which we shall have to allude further. In the South-Eastern Hospital, with 3557 cases in all, there were 3090 cases of scarlet fever and 148 of diphtheria, and there were 15 cases of diphtheria following scarlet fever, with 10 deaths. In the Northern Hospital for Convalescents, Winchmore Hill, 4907 patients were admitted, of whom 4666 were suffering from scarlet fever, 201 from diphtheria, and

40 from enteric fever. Here, in 47 cases, diphtheria supervened during convalescence from scarlet fever, and of these 31 were fatal. In the Gore Farm Hospital, Darenth, Kent, opened for the reception of scarlet fever convalescents on July 3rd, 1892, 2867 persons were admitted. There originated among them 71 cases of diphtheria, 96 of tonsillitis, and 51 of ulcerative stomatitis.

We have only space, in conclusion, to allude to the very striking circumstances attending the appearance and disappearance of diphtheria in the South-Western Hospital, which, as we have said, had hitherto enjoyed immunity from this terrible complication. It arose under circumstances of overcrowding, when the floor space per bed was reduced from 144 square feet to 105. Within three weeks from the time of this diminished space no less than seven cases of diphtheria and three cases of other throat illness occurred in that ward for the first time in its history. On June 22nd the six extra beds were removed, so as to restore the original floor space per bed, and from that time no fresh case has appeared. Of the other eleven cases, six arose in wooden huts, of which the allowance per bed of floor space was only 100 square feet. As the pressure of cases in them diminished so did the disease, and during four months only one case occurred. These facts deserve to be much pondered over in respect to a disease of the origin and spread of which so little is known, and they give grave emphasis to the protest of Dr. GAYTON, who has eighty-eight beds for diphtheritic cases, against any addition to the number, as involving (besides an undue strain on the medical officer) through the mere aggregation of cases of so malignant a disorder an increasing virulence of it. The suggestion may be true—though this has not yet been proved—of scarlet fever and of other diseases besides diphtheria. We must defer other points in these interesting reports for notice on a future occasion.

IN former numbers of THE LANCET we have pointed out the necessity of some changes being made in the first examinations of the Conjoint Board in England, and we purpose now to deal with the second examination, in which only two subjects are included—Anatomy and Physiology—but in which the failures amount to almost 40 per cent. A student who has been registered for eighteen months is eligible to present himself for this examination six months after passing the first, notwithstanding that he may not yet have passed in Pharmacy. He has only to attend a course of lectures on Anatomy subsequently to having passed in Elementary Anatomy, a course of lectures on Physiology, and must have accomplished six months' work in Practical Physiology, and have dissected for twelve months in order to qualify for this step. It should be noted that the only compulsory subject at this point of the student's career is the course of lectures on Anatomy. He may dissect and attend his Physiology courses at any time, even before passing in his early scientific subjects if he chooses to do so, and this will probably have been the case if he has been referred in any one of these subjects. A six months' working interval is all that is insisted on, during which the student has to acquire a thorough knowledge of the two great sciences—Anatomy and Physiology—upon which the principles and practice of medicine and surgery are founded. Could anything be devised which would more surely tempt men to "cram"? Could anything be more pernicious for the after career of the student than for him to have passed an examination in these foundation-sciences by the sheer effort of "cram" and not as a result of thorough, honest work? It may be said that this does not occur, but unfortunately the experience of teachers in every medical school contradicts so optimistic a view, and it is because of the faulty character of the examinations that such a result is even possible. The Conjoint Board in England has unfortunately inherited many of the traditions and the examination methods of the Royal College of Surgeons of England, and among these are a complete separation of the oral from the written part of the examination, a strict limitation in time for the examination of every student, and a faulty system of marking. Furthermore every candidate is submitted to an oral examination, but if a student has failed in his written paper, and cannot possibly retrieve his fate, we fail to see the utility of subjecting him to this unnecessary ordeal. It wastes the examiner's time and energy, and is a humiliation to the candidate. Again, if the examiner at the oral examination had some knowledge of the character of the answers in the candidate's written paper he could adapt his examination to that knowledge. For example, should the student have obtained very high or very low marks, or only such intermediate ones as would cause his passing to depend on his success at the *viva voce*, a difference in the extent and stringency of the examination would be made by every competent examiner. Under the present system the examiner knows nothing of the candidate's work, and the examination tends to become a dull routine, for it is only at the end of the day's work that he knows whether the fate of the candidate has been decided on his marking. This may secure impartiality, but it operates most unfairly on most of the candidates. When the bell rings the examiner has to assess the value of an examination which, if continued for a few minutes longer, might quite alter the result. No real decision has been arrived at as to whether the student should pass or be rejected, and in the case of the doubtful candidate rejection or passing becomes a mere question of luck. Six candidates could be examined in an hour, giving to each a longer or shorter time, but always as much as is necessary under a proper system, by which the oral examiner knows the value of the candidate's written paper (as is the case at all the universities), as readily as by the present mechanical and routine method of allotting ten minutes, no more and no less, to every examinee. Examinations carried out with "military precision" may give a fair average, but are absolutely unjust to the slow or nervous student. The system of marking is unique. Ten is the maximum number of marks in anatomy and physiology respectively in both the written and the oral examinations, but any figure under three given in any one of the four parts of the examination necessitates a rejection in that subject in spite of high marks gained in the other parts. The student's aggregate in either subject must not fall below eight. This system renders useless for marking any number beyond six or below two, and in practice the opinion of the examiner is conveyed by the numbers two, three, four, and five, four being the level pass, three a possible pass, five

the redeeming counterpart of the three, and two the absolute rejecting mark. This limitation of the marking to the employment of these four numbers practically repeats the old system of "good," "moderate," and "bad" in another form, and is a mere travesty of a proper numerical system. The opinions of experts on these errors in the examination were made known to the Royal College of Surgeons in 1882 by Mr. TEALE, Professor GAIRDNER, and Sir WILLIAM STOKES, when they acted as visitors for the General Medical Council; but in spite of the severe condemnation of such eminent authorities the committee of management still simply follows in the very same path, conserving all the faults as well as the merits of the old examining body. "Should a candidate break down with any one of his examiners, there is no possibility of his work being reviewed and compared as a whole. Under a system in which merely ten minutes or a quarter of an hour is allowed for each oral portion of the examination, a candidate who has proved unsatisfactory over a very small area may be rejected, although on the whole well-informed." ven in anatomy, and much more in physiology, the visitors were of opinion that placing the fate of a candidate in a balance, of which the scales may be turned by the difference in one department of one of three unit figures, recorded without fractions, is a system of assaying that tends to discourage refinements of judgment and to throw too much weight into an individual decision perhaps on too few data. "It is questionable whether the well-prepared are as secure of passing as ought to be the case. A man of average ability, who has worked honestly and well, ought to be able to present himself for examination without fear of rejection." Such passages as these can be as truly written to-day as twelve years ago.

THE Leicester press announces that small-pox is at last stamped out in the borough, arriving at this decision from the fact that fourteen days—an interval which represents the incubation period of the disease—have elapsed since the occurrence of any fresh cases. And one paper implies that this news will be by no means grateful to THE LANCET. The writer of the article in question is entirely in error. Nothing would be more grateful to us than to learn that Leicester, as now administered in so far as the Vaccination Law is concerned, was not to be again exposed to small-pox. It is perfectly true that we have all along contended that the so-called "Leicester system" was no system at all; that at its vital point the defence made against small-pox lay in the vaccination of those most exposed to the infection, and that where the protection afforded by a recent vaccination was neglected, small-pox, with almost unerring certainty, selected its victims. We have also all along contended that the quarantining of healthy people on the assumption that they might be incubating small-pox was a practice that could only break down when put to the test; and we know how signally it did break down in the face of a prevalence of small-pox so trivial in amount that it can hardly be referred to as a test at all. Further, we have contended that Leicester, by means of its makeshift hospital accommodation, did harm rather than good to that part of its "system" on which it professes to set most store; and we have been fully justified, whether we consider the exposure of scarlet fever patients to small-pox and their infection, or the special incidence of small-pox in the neighbourhood of the small-pox hospital. In fact, we have been justified at every point, and we feel very strongly that Leicester has nothing to boast about. But the writer of the article to which we are especially referring now asks us how it is that Leicester has been so successful in "grappling and stopping the spread of small-pox," and, having put an enigma to which there is no answer, because the enigma does not exist, he immediately proceeds to explain that under the "Leicester system" small-pox multiplied and continued in the midst of the borough, there having been no less than "300 cases in sixteen months." If so sustained a prevalence of small-pox as this and the failure to grapple with it and to stop it during no less than sixteen months is regarded by Leicester as a feat deserving of a flourish of trumpets, Leicester must be content to remain its own trumpeter and to allow its "system" to be held up to other sanitary authorities as one that has signally failed. We have, therefore, no answer to give.

But Leicester, after all, misses the essential point of our recurring comments and of our insistance that the "system" is not a thing to be imitated. So long as small-pox is prevalent, whether in Leicester or elsewhere, our main concern has been for the unfortunate and irresponsible children who have remained unvaccinated because their parents have been led to believe that there was an alternative provision in the "Leicester system." We have very little thought or concern for adults who, having reached an age of responsibility, decide to remain unvaccinated. There are not many such in Leicester, for the adults attacked have in large measure retained some portion of the protective influence of a primary vaccination received in infancy; but it is the children of these partially protected adults who are a matter of concern to all who are interested in the promotion of public health, and it is amongst these unfortunate children that, according to Leicester's own showing, small-pox has been so especially fatal. This it is that makes us unhesitatingly unite with Leicester in expressing gratification that the small-pox of this year's warning epidemic has practically disappeared. Leicester asks us a question. Let us, in turn, become the questioners. How is it that during the 1893 prevalences in different parts of the kingdom small-pox was so especially fatal, proportionately to their numbers, amongst the unvaccinated? And, above all, why is it that the incidence of small-pox attack, which formerly was all but confined to infants and young children, has become transferred to adults, children in the main escaping and vaccinated children having practically an absolute immunity? No talk about sanitary precautions helps in the least, for the adults get benefit from these just as children do. One thing alone explains it. It is that vaccination has, except just recently in a few places, come to be an affair of infancy, and that infants and young children formerly unprotected against small-pox now possess a prophylactic which stands them in good stead until it begins to wane on the approach of young adult age. This latter question is one which seems especially to be avoided by those who are opposed to

vaccination. They, whether at Leicester or elsewhere, cannot be got to face it and to supply an answer.

SIR HENRY ACLAND, in spite of his advanced age and the malign influence of three or four attacks of influenza, was unable to resist the invitation of the guardians of the Mile-end Infirmary to come to London and deliver to the nurses trained in the infirmary the certificates awarded after due training by the medical officer of the infirmary, Dr. ROBINSON, and examination by Mr. PERCY DEAN of the London Hospital. Sir HENRY ACLAND'S good memory carried him back to a time far beyond that at which our own Commissioners disclosed the terrible defects of the provisions for the treatment of the sick, of which none were more scandalous than the absence of trained nurses—the patients being nursed by those who were only a little less sick or a little less infirm than themselves. In his classical memoir on the cholera at Oxford, written nearly forty years ago, he has an important section "On the necessity of providing nurses for the poor," in which he forecasts and suggests the coöperation of the guardians in training nurses, and most of the other changes and improvements for nursing the sick poor which are such a striking feature of the age in which we live. He referred to the application then being made by a committee of the Epidemiological Society to the Poor Law Board for promoting the supply of nurses to the poor through the medium of workhouses. It must be very gratifying to him to see in the better nursing in workhouse infirmaries, and in the provision made for nursing the poor in their own homes, such a splendid realisation of his own views. They are the outcome of that strong element of Christian humanity which—despite all its detractors—has been eminently exemplified in and fostered by members of the medical profession; notably—that we may make no invidious distinctions among the living—by such men as Dr. STOKES in Dublin and Dr. ALISON in Edinburgh, to whom Sir HENRY ACLAND most fitly dedicated his memoir. This great provision for the very poor either in their own homes or in workhouses is now advanced. The rich, too, amply avail themselves of the provision of trained nurses. Hence it comes to pass that only the poorer sections of the middle class are unable to avail themselves at all adequately of the great help and comfort of a trained nurse. By this large and important class the trained nurse is still considered, as was remarked by another speaker at the meeting, rather an impracticable luxury. Among the ways in which this may be altered is the multiplication to a reasonable extent of nurses, and the abolition of those costly intermediate institutions which absorb so much of the payments to be made to the trained nurse. There is no reason why well-equipped workhouse infirmaries with good medical superintendents, should not add to the stock; indeed, it would be disappointing if, out of all the improvements introduced into their administration, the use of them as a training school for nurses was not to emerge. We will not pretend to be satisfied with one year of training, which is the rule at Mile-end as at several other workhouses, but not all. This is a detail, though an important one; but the guardians deserve credit for seconding so cheerfully the efforts of Dr. ROBINSON, and will find their reward in a steady supply of nurses of a higher average capacity.

Sir HENRY ACLAND spoke of the high position now occupied by English nurses, including, doubtless, all British nurses. Few positions can be more responsible. The calling of a nurse is one which attracts women of all ranks, and for not a few has a peculiar fascination. It cannot be too highly extolled when undertaken by those who are fit, nor can its responsibility well be overstated. Coincidently with the training of nurses has arisen a public confidence in them which did not always exist. Even now in many intelligent families there is a strong objection to avail themselves in the emergencies of sickness of a nurse. This objection is not always baseless, but its base is very limited. There are nurses without tact, without taste, without sympathy, and sometimes without courage. They are exacting in their wants and mechanical and hard in the discharge of their duties. They annoy servants and worry relatives, and fail to consider and conciliate the patient. If the case is not interesting, or the circumstances of the house are not altogether comfortable, they make petty complaints or excuses for leaving. These are terrible faults in a nurse, who, though a stranger, may have practically the sole charge of a helpless patient for weeks together. If any examination could be invented to test the moral qualities of nurses it would be a great boon, and those should be unhesitatingly rejected who are deficient in patience, in magnanimity, in high principle. Perhaps the moral side of the qualification of nurses has been too little regarded by those who undertake to train and certify them. Certain it is that one such nurse as we have described brings the whole system into discredit. But it must be admitted that they are few and far between, and that those who have once experienced the services of nurses are prone to wish for them again when sickness comes. The advantage of good nursing as an adjunct to medical treatment is so great that every effort should be made to place it within the reach of those sufferers who are still practically without it. So far the calling is largely in the hands of women—and, perhaps, naturally so. They were meant by nature for offices where gentleness and tenderness of touch count for much. But men have too readily conceded the field to them. There is a tenderness of men as well as of women. There are large classes of disease among men in which a male nurse is much more helpful than a female. All the reasons for demanding proofs of good character and temper which we have urged in the case of women apply equally to men. We believe there is room for a much larger number of male nurses.

HYDROPHOBIA FROM THE BITE OF A CAT.—An inquest was held by Dr. Danford Thomas on the 28th ult. on the body of a commercial clerk, whose death, according to the evidence forthcoming, appears to have resulted from hydrophobia caused by the bite of a cat, which he was caressing. Dr. S. Craig, of Stroud Green-road, stated that he was called to the deceased on the 19th ult., when he complained of pain in the abdominal region and in the back. A wound which had healed was apparent on the deceased's thumb, having been caused, according to the evidence of the wife, by the bite of a cat inflicted on the 17th ult. The case, said the medical witness, was a hopeless one from the beginning. A police-constable stated that he learnt that the cat, or a similar one, had bitten several dogs. The verdict returned was "Death from hydrophobia."

Annotations.

"Ne quid nimis."

THE IMMUNITY OF QUACKERY.

ON Wednesday last Mr. Hannay, to whose ability as a magistrate we are glad to bear cordial testimony, stopped the evidence for the defence in the prosecution of the officers of the notorious Medical Battery Company, and discharged the defendants, stating that after giving much time and thought to the case he had come to the conclusion that if it were sent for trial no jury would convict the accused of a conspiracy to defraud. While we are of opinion that the magisterial conclusion was correct, and that the specific charges brought against Mr. Harness and his colleagues or *employés* were not sufficiently susceptible of uncontrovertible proof to warrant any other issue, we earnestly hope that the proceedings will draw public and acute attention to the remarkable licence enjoyed by irregular practitioners of medicine—by persons, that is, who possess, in the legal sense of the word, no licence whatever to practise. Medical electricians, medical hypnotists, medical botanists, and medical *masseurs* on the one hand, and the votaries of "safe-medicine," bone-setters, and the proprietors of patent remedies on the other—all are ready to treat the community for every ill that flesh is heir to, and all would seem to be the depositories of therapeutic secrets which have been denied to the intelligence of men who have made surgery and medicine the study of their lives, and have stood the test of severe examinations as to their proficiency and practical knowledge. Surely but very little thought bestowed upon this situation should enable the dullest, and even the most imaginative, to see that it is a highly ridiculous one, and one that reflects in no qualified manner upon public astuteness and good sense. The public have to choose the fittest people for their medical advisers, who occupy a position—and this no one can gainsay—of the highest trust and most delicate nature. The competitors for their suffrages are two:—(1) the medical profession, consisting of a body of trained and educated men highly tested under a highly tested system in all the necessary scientific acquirements; and (2) the irregular practitioners, whose credentials are simply their own assertions supported by the corroborative evidence of satisfied patients. Which body is more likely to be the really learned one? In every other profession or walk of life the public would at once give their vote in favour of the properly trained body, whose proven accomplishments speak for it. Who trusts an amateur lawyer? Who employs the gardener, however able an horticulturist, to tune the piano? In every other profession or walk of life self-presented testimonials receive the exact attention from the public to which they are entitled, and testimonials from outside are subjected to some scrutiny. In medicine alone over such obviously necessary precautions is hesitation to be observed. And this we stigmatise as a ridiculous state of affairs, although it is easy to see what has brought it about. The eulogy of grateful patients cannot be depended upon. Doubtless many have been honourably given in all conviction, but as a whole they must be unreliable for the following reasons, briefly stated:—many minor complaints tend towards recovery; aggravation and prolongation of these complaints by inappropriate treatment do not necessarily obviate recovery; there are no limits to the imagination of the hypochondriachal and hysterical subject (hence the connexion between the imaginative patient and the quack); and there are many diseases, especially diseases of the nervous tracts, whose natural course is one of remission alternating with exacerbation. These are the circumstances which account for the bulk of the printed and sworn testimony in favour of unorthodox methods; and there is not a properly qualified medical man who has not himself received such testimony to his apparent ability, and, be it added, treated it with the respectful privacy that it merited. We are certain that the time is now near when the public press will consider the matter a little from our point of view, and will point out to their readers that the question is not the efficacy of this or that pill, or the utility of this or that appliance, but a much broader one—viz., the question of choosing between the medical practitioner and the quack. Consideration of the subject with the care that it demands must end in thoughtful persons joining us in our beliefs that, all things being equal, the man who has been specially taught will probably know better than the man who has not what is a trivial disease and what an incurable; and that the payment of large sums for unqualified aid in either case must be bad general economy.

THE PROPOSED TEACHING UNIVERSITY FOR LONDON.

WE understand that the recommendations of the Royal Commission, to which we referred last week, will be found to go far beyond any scheme that has hitherto been brought forward. They are said to aim at the formation of a single, but most comprehensive, metropolitan university, with Faculties in Law, Theology, and Music, as well as in Medicine, Arts, and Science, and the last named will be subdivided into the departments of pure science and applied science. The objection to the large representation of medicine in the Gresham Charter will not be urged against the new scheme, for the declining number of students in the Arts Faculty at the colleges in comparison with the steadily increasing number of students in Science and in Medicine will not be found to have had much consideration in allotting the representation among the teachers in the various Faculties. We fear that when the report is published the medical teachers will find grave cause for dissatisfaction, and that the non-medical members of the Commission have paid but scant attention to the claims of medicine. The other forms of higher education in London have received the foremost position in the scheme.

MEDICINE'S FORGOTTEN WORTHIES.

"LITTLE honour in their own country" is vouchsafed to British medical men, as we are constantly being reminded by the tributes that come to them from abroad. Only the other day the Rector Magnificus of the University of Berlin surprised, delighted, and—may we not also say?—rebuked a distinguished London audience by his rehabilitation of Francis Glisson, the consummate Cambridge physician, whose discoveries in the anatomy of the liver ennoble his name for all time, and whose anticipation of Haller's doctrine of muscular irritability, to say nothing of his truly Hippocratic treatise "De Rachitide," is in the medical world among the greatest of what Bacon calls "the births of time." The list of "medicine's forgotten worthies" might be indefinitely prolonged if anyone in the day now passing were to note the exclusion of honourable lives from our encyclopædias and biographical repertories, or, even in cases where mention is made of them at all, to note the inadequate appreciation of the work they completed and the good service they performed. Take, for instance, that justly authoritative compilation the "Dictionary of National Biography" and look for reference even to names as worthy of notice as two-thirds of those which fill columns of its space. Scant recognition of merit where such is due prepares the medical reader for actual omissions where mention was justly called for. In its very last volume, midway through the letter M, we find conspicuous by its absence the name of Edward Milligan, and we ask ourselves involuntarily why he was so pointedly ignored. We recall the fact that in the "Bibliographia Celsiana" prefixed by

that great medical scholar Salvatore di Renzi to the second volume of his monumental edition of Celsus (Naples, 1851–52) there is an excellent account given of Edward Milligan's rehabilitation of that author, attention being especially drawn to his punctuation and division of paragraphs, of which the Neapolitan editor makes effective use, particularly in translation. We remember that Daremberg, the ablest of French historians of medicine, to whom the text and interpretation of Celsus owe so much, makes honourable mention of Milligan's labours; nor do we forget that in such standard works as Riddle and White's Latin Lexicon Milligan's edition is the only one referred to. It is, indeed, the single serious attempt yet made by British scholarship to edit the "Roman Hippocrates" with due regard to purity of text and sufficiency of explanatory comment, and its merits are not passed over in the great "Biographisches Lexikon der Hervorragenden Aerzte aller Zeiten und Völker," which was published recently at Vienna and Leipsic. To that treasure-house we go for further information as to Edward Milligan, and we find that he was born in 1784 in Dumfriesshire to the humble *métier* of a bootmaker, but that he educated himself "zu einem ausgezeichneten Gelehrten" (to be a distinguished scholar) at Edinburgh, where, turning to medicine, he graduated as Doctor in 1815, and, besides his three editions of Celsus (1826, 1831, and 1839), edited with Latin text and English translation Cullen's "Nosologia," wrote on "The Doses of the Ancient Physicians," and on "The Theory of the Frontal Sinus," and was for years conjoint editor of the *Edinburgh Journal of Medical Science*. He died in London about half a century ago, leaving a record as medical teacher and scholar eminently worthy of notice in his country's "Dictionary of National Biography," and surely deserving of something better at the hands of his compatriots than to be relegated to the pages of a German encyclopædia for a brief acknowledgment of his meritorious life-work.

A PHYSIOLOGIST'S CAREER.

THE magnificent demonstration organised on the 24th ult. by the Geneva Medical School in honour of Professor Moritz Schiff having attained the fiftieth year of his scientific life deserves more than the passing notice already given. A knight errant of biological research Schiff had barely graduated at Göttingen in 1844, when he gave to the world his treatise "De Vi Motoria Baseos Encephali," in which, independently of the physiological truths established, he showed himself a master of inductive method. His early familiarity with the processes of the laboratory was reinforced by philosophical study, for, as he told his Geneva audience on the interesting occasion of the 24th ult., he schooled himself in the Platonic metaphysics, beginning with the "Phaedro," while pursuing his researches into nature. A comprehensive survey of the biological field convinced him that to approach the investigation of man's mind and soul we must start from his anatomical and physiological constitution, and this latter can be scientifically understood only by the comparative method—comparative anatomy and comparative physiology being "subjects never to be divided," but perfecting, while simplifying, each other as the student keeps them concurrently in view. Proceeding from this point of departure, the physiologist ascends from plane to plane in his contemplation of man's organism and development, till no field of human activity, intellectual or moral, is excluded from his purview. As Professor Schiff admirably put it on the celebration of his seventieth birthday in the January of last year: "Aujourd'hui la physiologie pénètre dans tous les domaines: en Droit pour les idées de culpabilité et de responsabilité; en Philologie et en Æsthétique, avec M. Taine, qui a pour aïeul dans cette voie M. Herder, le poète allemand. Même la Théologie devient la débitrice de la Physiologie." Interesting biographical details accompanied the genial *sarant's* account of his professional and professorial career; when, after studying at the leading German universities and at Paris, he returned to his native Frankfurt as a practitioner of medicine, he found himself weighed down by a sense of responsibility in dealing with the health and the lives of his *clientèle*. Under this feeling he pursued his laboratory work with more ardour than ever, only to find, as he confessed, that it did harm to his professional reputation. "We want a physician," said his patients, "who has left the laboratory behind him—one who has 'finished' his education!" The impossibility of ever reaching this stage of "finish" was too much for Schiff, and so he gave up practice and returned to the laboratory, where he has remained ever since. After serving for a time on the medical staff of the Baden revolutionary army in 1848, he accepted the professorship of Comparative Anatomy in the University of Bern, a post he held until 1863, when he proceeded to Florence to fill the chair of Physiology in the Istituto di Studi Superiori. Driven from that school by the anti-vivisection faction after five years brilliant and most useful work, he was invited to the professorship of Physiology in Geneva, where he has laboured and taught ever since. How deeply the Florentine School deplored the loss of its kindly German colleague was shown in THE LANCET of February 4th of last year, in which a message of congratulation, couched in admirable Latin, was published from the professorial staff of the Istituto on his reaching his seventieth birthday; but to whatever nationality his pupils and brother teachers belonged, he equally conciliated their respect and devotion, a result brought remarkably into evidence at the demonstration of the 24th ult. Of all the tributes that came to him by telegraph or post or personal conveyance on that auspicious day none was so gratifying as that handed to him by a former pupil, Professor Herzen of Lausanne. This was the first volume of a collective reprint of his papers and articles contributed during the last fifty years to scientific periodicals, during which the famous lectures "On Carlo Matteucci: his Merits in Physiological and Medical Physics, which appeared in THE LANCET of July 22nd and 29th, 1876, are destined in due course to be included. The expense of the publication was met by subscriptions of old pupils scattered over the medical world, mainly in the continent of Europe, and its value as supplementing and completing such well-known *chefs-d'œuvre* of his as the "Lehrbuch der Physiologie des Menschen," the "Leçons sur la Physiologie de la Digestion," and the treatise "Sulla Misura della Sensazione," written with equal grace and force in German, French, and Italian, has but to be indicated to be appreciated. One eminently gratifying feature of the celebration was the visible and assured bodily vigour of the illustrious physiologist, who did not fail to ascribe this blessing to its true origin. Science, he concluded by saying, keeps the spirit ever young and reacts beneficially on the vital forces. Fifty years and more of laboratory work find Moritz Schiff still unimpaired at his post, deriving health and inspiration, ay, "renewal of life," from the congenial atmosphere. In the highest sense of all, "La Science conserve." Such were the final and the fitting words of the loyal commemoration of "A Physiologist's Career."

WINDOW-CLEANING ACCIDENTS.

IN THE LANCET of Dec. 9th, 1893, we directed attention to the frequency with which, notwithstanding repeated warnings and precautions, window-cleaning accidents continue to occur. The matter was at that time under discussion in connexion with the liability of householders in the event of injury being sustained by a servant when employed in this way, and we have as a result the establishment of a right of compensation in favour of the injured person. So

far so good, but we may well ask, notwithstanding, what has been done towards the abatement of the evil? No return in money, it is obvious, can make more than very partial reparation for grave, and perhaps permanent, physical damage. The statutory provision therefore, is at best but a deterrent and a palliative, and it may prove to be one of ruinous cost to the householder. It leaves nearly untouched the question of prevention. Respecting this aspect of the subject there is little to add to what has been already said. The real difficulty is one of house construction, since it is hardly possible to remove the possibility—nay, the daily risk—of accident while almost all windows are made to open and close in a fixed framework. No doubt this danger may with due care be minimised, but it clearly cannot under existing conditions be entirely done away with. We would the more decidedly advocate a return wherever possible—and in the case of houses now building, or to be built, this ought to be fairly possible—to some form of revolving window, whether on swivels or on hinges, which will allow both surfaces to be cleaned from within the room.

THE CARE OF IDIOTS AND EPILEPTICS.

A LETTER from Miss Louisa Twining in a recent issue of *The Times* has evoked from Dr. Shuttleworth, who is entitled to speak on this matter with all the authority which extensive practical experience and intimate acquaintance can bestow, an interesting communication which furnishes at once a cordial approval of Miss Twining's plea for this distressed and pitiable class, and a lucid setting forth of the neglect which it has experienced at the hands of the constituted authorities. In the popular mind, perhaps also in the official, there is still a strong inclination to regard all mentally afflicted as belonging to a single class of "persons of unsound mind," and to believe that they should all be treated if not similarly, at least in the same institution. It seems almost superfluous to point out how utterly erroneous such a view is. As well might it be argued that because typhus, scarlet and typhoid fevers are all exanthemata and all fevers, there is no particular reason why they should not all be treated together. The absurdity of such a proposition is self evident; the irrationality of similar reasoning in the case of persons of unsound mind, if not quite so obvious, is not the less certain. As Dr. Shuttleworth points out in the letter to which we have referred, so long ago as 1865, the Commissioners in Lunacy reported as follows: "It has long been our opinion, as the result of extended experience and observation, that the association of idiot children and lunatics is very objectionable and injurious to them." The Charity Organisation Society also carried out an extensive investigation into the condition of the class under discussion, and came to the conclusion that the proper way of dealing with these unfortunates was by the establishment on the part of each county, or group of counties, of institutions at once custodial and educational, which should be supported out of the rates. Ten years later a Royal Commission, entrusted with the duty of investigating the condition of the "afflicted classes," recommended similarly that power should be given to county or town councils to set up institutions for imbeciles capable of being educated, and that children of this character should not be left for any time in workhouses or asylums; and, finally, the most recent lunacy legislation, the much discussed Act of 1890, provided that a local authority, either alone or in conjunction with any similar authority, may make provision for idiots, or patients suffering from any particular form of mental disorder. As Dr. Shuttleworth points out, it is certainly matter for regret that such legislation was made permissive and not compulsory. It is, perhaps, a subject for congratulation that in this country if legislation does not provide for the relief of disease and distress, charity is sure to attempt to fill its place. The asylum at Earlswood, the well-known institution at Lancaster, and a few other places of similar character are the reply of charity to the strong, if silent, appeal of a distressed class. The high character of these institutions, and the wonderful success which they have attained, is the strongest proof of the usefulness of the work in which they are engaged. But they are incapable of dealing with more than a fraction of the cases which are urgently in need of such training and care as they supply, and it is on behalf of those who are not reached by such means that the plea is now being urged. In the metropolitan district, by means of the admirable institution at Darenth, something has been done; in certain asylums separate departments have also been established for dealing with idiots, but these efforts, admirable as they are in themselves, only avail for a mere fraction of the multitude which is clamouring for care. It is to be hoped that some systematic attempt will soon be made by that part of the State whose duty it is to provide such accommodation as is necessary for those idiot children, as well as such education and such general training as is suited to dispel, as far as that is possible, the dark cloud of helplessness and imbecility which overshadows them. The fact that other countries, some of them much poorer than our own, have already made such provision as is still wanting here should at least be no discouragement in such an enterprise. There is another class to which much of what we have written also applies—viz., epileptics. Many of these, even such as are under certificates, are capable of doing much in the way of self support, under proper control and careful training. Their close association, as at present in many cases, with lunatics cannot be anything but injurious, and we feel sure that many could be placed under conditions much more hopeful and probably much more happy than are at present possible. We have repeatedly noticed in our columns the different steps recently taken in the establishment of the National Society for the Employment of Epileptics. The class with which such a society is intended to deal is, of course, not such as comes within the cognisance of asylum authorities. In many respects, however, the condition of the members of this class is even more pitiable and hopeless. They have probably no technical claim for anything but the workhouse; but when this is the only refuge available for men and women who are both willing to work and capable of doing so there is surely an opportunity for charity to hold out a helping hand. A society with such an object must commend itself to everyone. Even the conviction that the State, here as elsewhere, should provide for such a class should not stand in the way of the immediate good which the society is attempting to carry out, and it is to be hoped that its laudable efforts to ameliorate the lot of those who are the subjects of such dire misfortune will be crowned with the most unequivocal success.

SUGGESTED TEMPERANCE LEGISLATION.

A MEETING held last week in the Town Hall, Liverpool, was of more than usual interest on account of the decided tone adopted by several speakers on the subject of temperance legislation. It is noteworthy that the Lord Bishop of the diocese, who spoke at some length on the increasing prevalence of drunkenness among women, was emphatic in his condemnation of the grocer's licence. We have again and again drawn attention to the undeniably injurious influence exercised by this extension of trading rights. It requires no words to explain once more why, more than almost any other known and generally acting cause, the error in legislation which it illustrates has proved a very stimulus to intemperance among educated women. That this effect has been in very many instances its practical outcome cannot now be questioned. As regards its repeal, we fear there is at present no reliable ground of expectation, but the need is not therefore less, but greater

that its persistently injurious effect should be kept before the electorate. Another matter touched upon by the Bishop was the sale of alcohol to children. We entirely agree with him that this wholly needless and indefensible practice ought to be summarily repressed, as might easily be done. The subject of special legislation with respect to habitual drunkards was not omitted in the discussions at this meeting. Were considerations of utility alone considered, we may take it that there could not long exist any serious difference of opinion as to the privileges of such persons. Too much, in our opinion, has been made of these supposed privileges, and we sincerely trust that before long public opinion with regard to the matter will have so ripened as to require of the self-indulgent, even by personal restraint, if needful, the fulfilment of his primary obligations to society. There need be no haste, no harshness in the process. It implies no more than mere self-protection on the part of his relations or neighbours, and would doubtless in many cases prove of real benefit to himself.

THE DIFFUSION OF SMALL-POX.

IN several of the districts hitherto affected there was last week some increase in the amount of small-pox, but, on the whole, the prevalence has during the past few weeks been of such a character that we may be hopeful that we are this year dealing with an epidemic which is on the wane, and which, in consequence, has less of that property which leads to rapid extension than was the case in the earliest stages of the prevalence. In the metropolis the new cases rose to 13, and the cases under treatment on the river were 67 in number on Jan. 28th. In other towns the fresh attacks were as follows: West Ham, 10; Bristol, 15; Walsall, 14; Birmingham, 44; Nottingham, 20; Oldham, 11; Bradford, 16; Wakefield, 6; and Cardiff, 5. Besides this there are a number of places in which the fresh attacks range from 1 to 3. The persistency of the epidemic in Birmingham is a point worthy of note. In former years the influence of the borough small-pox hospital for mischief was raised, and we have during the course of this outbreak had to consider its influence on the inmates of the workhouse, in the immediate vicinity of which institution the hospital stands. Indeed, the borough authorities are evidently discontented with the present state of affairs, and hence the determination to provide a new small-pox hospital on a site far removed from any neighbouring population.

A ROYAL PHYSICIAN.

NINE months ago, under the heading of "A Royal Surgeon," we commented on the truly princely example afforded to his "brethren of the purple" by Duke Karl Theodor of the regal House of Bavaria, who, having qualified by academic and clinical study for the practice of surgery, had made a specialty of eye diseases as they occur among the poor, and had, on April 7th of last year, successfully performed his two thousandth operation for cataract. We have now to signalise the equally laudable devotion to the healing art, for its own sake and also for its application to the humbler classes of patients, shown by another scion of the same House, Prince Louis Ferdinand of Bavaria, who, making medicine proper his *métier*, crowned an honourable career in university and hospital by graduation and is now actively and usefully employed in the perennial warfare against disease. Cousin of Duke Karl Theodor, nephew of the Prince Regent of Bavaria, husband of the Infanta Maria de la Paz of Spain, and only twenty-three years of age, Prince Louis Ferdinand was equally under the temptation to lead a life of social, of lettered, or of artistic ease, but none the less found himself "irresistibly drawn to the healing art," for which accordingly he set himself to qualify "by patient study on academic lines." Nor, any more than his princely cousin, does he restrict his efforts to the philanthropic side of the profession only. He works in the laboratory as well as in the clinical ward, and labours to "rectify the frontier" of medicine by reclaiming territory long held by the forces of insanitation and disease. Among his more recent subjects of observation and research are the etiology and pathology of pleurisy, and these he has studied under the triple aspect of their clinical, bacteriological, and therapeutic interest. Twenty-three patients suffering from pleuritis recently came under his observation, and he has embodied his special study of their cases in a monograph published the other day. It is an able and independent contribution to our knowledge of a disease on which it is impossible to foretell when the last word will be spoken, conditioned and modified as it is by circumstance under the ever-changing, never-pausing influences of evolution. We congratulate the Prince on a work which, we are glad to think, is but one in an extended series, and which, apart from its professional value, will, in these days when rank and title, like every other traditional possession, are being proved in the democratic crucible do more for the honour and the permanence of his order than statecraft, however astute, or militarism, however brilliant.

EFFECTIVE FLUSHING.

THE report of the special committee appointed by the council of the Sanitary Institute to inquire into the quantity of water required to flush a water-closet and on the regulations restricting the amount to two gallons has been forwarded to us. It embodies the results of over 800 experiments, and the committee note that they have carefully observed in carrying them out (*a*) the suitability of the flushing cistern and water-closet on which observations were made; and (*b*) the proper arrangement of the two with regard to the flush-pipe and connexions, as insisted on in a communication from the water companies. The points to which attention was specially directed were: (1) the effect of the flush in removing the matters deposited in the closet-basin from such basin and the trap connected with it; (2) the effect of the flush in clearing the drain; and (3) the effect of the flush in clearing the disconnecting trap. The special experiments for this purpose were arranged as follow: 1. A series of drains was laid, 50 ft. in length, consisting partly of pipes and partly of half-pipes of the following sizes and gradients: 4 in., with a fall of 1 in 30, 1 in 40, and 1 in 75 respectively; and 6 in., with a fall of 1 in 30 and 1 in 40 respectively. At the head of the drain a simple short hopper basin was fitted, with an S-trap having a 2-in. seal, leading with a bend into the drain, the top of the closet basin being 2 ft. 3 in. above the drain. A good syphon-waste preventer, discharging two gallons in five seconds and three gallons in seven seconds, was placed 4 ft. 3 in. above the closet basin, and connected to it with a 1¼-in. flush-pipe. At the lower end of the drain a disconnecting trap was fixed. 2. A further series of drains was laid, 26 ft. long, consisting of 4-in. pipes, with a fall of 1 in 40, and of 6-in. pipes, with a fall of 1 in 60, respectively, the same closet and waste-preventer being used. The artificial excreta used for the experiments were composed of a mixture of soft soap, cocoa fibre and clay, and five pieces of newspaper. The results of the experiments were as follow: 1. As regards the closet trap, with a two-gallon flush 5 per cent. was retained, and with a three-gallon flush only 1 per cent. 2. In the 50-ft. drain, whether 4-in. or 6-in. pipes, with a fall of 1 in 40, after a two-gallon flush 21 per cent. remained behind, and after the discharge of three gallons only 3 per cent. was left. In the disconnecting trap at the end of this drain, with a two-gallon flush the retention amounted to 36

per cent., and with a three-gallon flush to 26 per cent. 3. In the 26-ft. drain, with a two-gallon flush the retention was 3 per cent., and with a three-gallon flush only 1 per cent. In the disconnecting trap, with a two-gallon flush the retention was 26 per cent., and with a three-gallon flush 19 per cent. The committee are of opinion that in regulations relating to water-closets both the minimum and maximum amounts of flush should be specified; and they would fix the former at three gallons and the maximum at not less than three and a half gallons. They would suggest that clause 21 of the regulations under the Metropolis Water Act, 1871, should read as follows: "so constructed as to discharge not less than three nor more than three and a half gallons of water at each flush."

RABIES AND HYDROPHOBIA IN THE WEST OF SCOTLAND.

IT is certainly time that the authorities in Glasgow and in the adjoining counties, particularly Renfrewshire, issued a stringent muzzling order which should extend over a considerable period. Nearly every day we read of rabid dogs being killed, usually after they have bitten several other dogs and thus ensured the spread of the disease. Already one boy has died from hydrophobia, and three men of the Renfrewshire police have just returned from Paris, where they had been sent for treatment by M. Pasteur's method. All this has been going on for months, and so far the authorities have made no sign, although it is well known that the disease may easily be suppressed by the proclamation and strict enforcement of a muzzling order.

DEATH AT HOME OR IN PUBLIC INSTITUTIONS.

MR. CHAMBERLAIN has produced a great impression on the public mind by investigating the number and proportion of the population that find themselves in the workhouse at the end of a life of labour. Some tables published in the report of Mr. Alfred E. Harris, medical officer of health of St. Mary, Islington, excite reflection on the painful proportion of persons who have to die elsewhere than at home. Of 1751 deaths registered in this parish—the most populous in England, whose death-rate compares favourably with that of London and of the thirty-three large towns—no less than 355 occurred in public institutions. It cannot be denied, while a sixth of the families in London are still living in single tenements, that their homes are not places to die in any more than to live in; but when the means of increasing the social comforts of the people are the great solicitude of thoughtful statesmen it is well to take note of the fact that so many die away from home, mostly in workhouse infirmaries or hospitals. The development of State hospitals is not altogether a satisfactory sign of the times and is only justifiable as the lesser of two evils.

CALF v. HUMANISED LYMPH.

FROM time to time the question is raised whether in vaccination the use of calf lymph is to be preferred to that of humanised lymph. As regards efficacy in result there is practically no difference between the lymph from the two sources. The returns of the calf vaccination station in Lamb's Conduit-street show a very striking uniformity in successful insertions; and, we believe, the results of the use of calf lymph supplied from other sources are similarly averred to be satisfactory. The main reason why arm-to-arm vaccination is generally preferred is the facility with which it can be practised, owing to the source of supply which the practitioner has always ready to hand. It is one of the remarkable facts in vaccinia that its transmission through generations of human beings should have had no manifest effect in modifying its characters, and that the vesicles obtained by primary inoculation from the calf are indistinguishable from those obtained by arm-to-arm vaccination, the primary bovine origin of which may date back nearly a century. There is an advantage, too, to the practitioner who vaccinates from arm to arm in that he is directly able to select his subjects and is responsible for the care exercised in obtaining and in transmitting the lymph. On the other hand, he is often so situated as to have no vaccinifers at his disposal, and he may have to rely upon lymph furnished from accredited sources. Should he then prefer calf lymph or humanised? In spite of the care that is taken to select lymph for storage, the practitioner may feel that under these circumstances lymph from the calf is to be preferred to that from a human source of which he personally knows nothing. For this reason, and also to meet the objection of possible transmission of other diseases calf lymph may be chosen. For revaccinations on a large scale—e.g., during epidemics of small-pox—calf-lymph may alone be available in sufficient quantity, as has been witnessed of late in many towns where vaccinations have been numerous.

THE RESIGNATION OF DR. LATHAM.

THE Downing Professorship of Medicine in the University of Cambridge is vacant, owing to the resignation of Dr. Latham after a tenure of exactly twenty years. Dr. Latham was a double first, having graduated in 1858 as nineteenth wrangler, following this up by securing the seniority in the natural science tripos in 1859 with, it is said, the largest aggregate of marks that had ever been obtained up to that time. His resignation has been received with great regret, and the medical school at Cambridge may have to look forward to a period of interregnum, for the emoluments of the professorship have now declined to such an extent that it is quite possible that suitable candidates will not be readily found for the post. The electors are Mr. Austen Leigh, the Provost of King's College and Vice-Chancellor of the university; Dr. Alexander Hill, the Master of Downing College; Sir Richard Quain, the President of the General Medical Council; Dr. Donald Macalister, representative of the university on that Council; Sir George M. Humphry, Professor of Surgery in the university; Dr. Alexander Macalister, Professor of Anatomy; Mr. Michael Foster, Professor of Physiology; Mr. G. D. Liveing, Professor of Chemistry; Dr. Sydney Ringer; and Dr. T. Lauder Brunton.

THE MEDICAL DEFENCE UNION.

THE annual report for the past year issued by the Council of the Medical Defence Union constitutes a good testimonial to the sound value of the association. It is evident and is universally allowed that members of the medical profession must be peculiarly open to injustice in many directions, for their position is singular in its combination of the ordinary business relations between employed and employer with confidential intimacy of the most unreserved description. From the report it will be seen that the Medical Defence Union has been able to successfully defend certain of its members from charges of malpraxis, from unfair treatment at the hands of public bodies employing them, and from attempts at blackmail; while it has also acted as an informal court of arbitration in disputes between brother practitioners. The progress of the Union during the year, as epitomised from the report, shows that the practical need for such methods of assistance as these is becoming largely recognised. The membership has risen from 2458 to 2924, the receipts from £1335 to £1377, and the guarantee fund from £3816 to £4150; while the income for the year shows a surplus of £395 over the expenditure. Two little facts make this position the more creditable. The first is that one case alone cost the Union upwards of £300;

the second is that at the end of 1892 there was a debit of £392, which is now satisfactorily wiped out. That this successful issue has not been arrived at without considerable labour may be judged by the fact that during the year it fell to the praiseworthy, if unenviable, lot of Dr. Leslie Phillips and Dr. A. G. Bateman, the honorary secretaries, to write 12,525 letters and superintend the dissemination of over 25,000 circular communications. One small comment may perhaps be permitted to us. If the Medical Defence Union could see its way clear, by any little concessions in return for other little concessions, to amalgamate with the London and Counties Medical Protection Society, the joint value to the medical profession of the two bodies working as one would certainly be more than double the sum of their separate efforts. Fusion should be brought about if possible.

THE ETIOLOGY OF DISEASES OF WOMEN.

THE *Medical Record* of Jan. 20th contains an address read before the New York County Medical Association on Dec. 18th by Dr. T. Gaillard Thomas, on the Etiology of Diseases peculiar to Women. He traces eight-tenths of such diseases to the four great climacteric periods of female life—viz., that of (1) puberty, (2) marriage, (3) childbearing, and (4) the menopause. He properly insists on the importance of careful attention to the natural development of organs in judging of the ailments associated with puberty, and the exercise of judgment on the part of parents and physicians in preparing the girl for this period, and putting her into the best conditions for meeting it. The most impressive part of his address is that in which he insists on the gravity of smouldering uncured gonorrhœa in the husband, as a cause of vaginitis, urethritis, metritis, and salpingitis in married women, and the duty of the practitioner to forbid marriage till there is on the man's part "a clean bill of health," and every trace of gonorrhœa or stricture is cured. The evils of childbirth he attributes chiefly to traumatism, which should be looked for and treated. Those affections connected with the menopause he thinks have been overrated, and indeed is of opinion that many ailments are naturally cured by the normal atrophy which overtakes the sexual organs.

THE INTERNATIONAL MEDICAL CONGRESS.

FROM Rome, under date the 26th ult., our own correspondent writes:—"From the Secretary General of the Congress I have received the first list of the papers which will be read and discussed in one or other of the plenary sittings. Some of these have already been announced in THE LANCET; but it may be well to give the whole in the order in which they are officially issued. Professor Nothnagel, who holds the chair of Special Pathology, Therapeutics, and Clinical Medicine in the Vienna school, will lead off with a communication on the Adaptation of the Organism to Pathological Alterations; after whom will come Professor Baby of the University of Bucharest on the Position of the State in regard to the latest Results of Research on Infective Maladies. The third on the list is Dr. J. B. Stokvis, Professor of Pharmacology and General Pathology in the University of Amsterdam, whose thesis is Clinical Medicine in its Relations with Pharmaco-therapeutics and with Materia Medica; the fourth, Professor Giulio Bizzozero, who holds the chair of General Pathology in the Turin School, who will communicate a paper on The Increase and Regeneration of the Organism; and the fifth is Professor Virchow, Rector Magnificus of the University of Berlin, whose anxiously awaited monograph deals with Morgagni and the Anatomical Conception. The University of Paris will have a brilliant representative in Dr. Brouardel, who, sixth on the list, will read a paper on the Struggle against Epidemics, particularly from his standpoint as Professor of Juristic Medicine in that school; while Christiania will send Dr. S. B. Laache, lecturer on Propædeutic Medicine, whose theme is Idiopathic Hypertrophy of the Heart. Professor Ramon Cajal of Madrid will communicate an elaborate paper on the Morphology of the Nerve Cells; Professor Abraham Jacobi, who holds the chair of Children's Diseases in the University of New York, will discourse on the theme he entitles 'Non Nuocere' ('Hurt Not'); while Dr. A. J. Danilewski, sometime Professor of Medical Chemistry in the University of Charkow, now of St. Petersburg, will contribute a paper on the Biological Action of Phosphorus in its Organic Combinations. Cambridge is represented, eleventh on the list, by Professor Michael Foster, the subject of whose paper has yet to be announced, and the University of Berne by its distinguished Professor of Surgery, Dr. Theodor Kocher, whose communication is also without its appropriate title." Our correspondent, writing later, says:—"For reasons not yet made public the central committee have decided to hold the sittings of the Congress in the Palazzo dell' Esposizione, in the Via Nazionale, and not, as at first contemplated, in the Policlinico. The latter, indeed, in spite of every acceleration of the works, can hardly be in readiness by March 29th, and, probably in view of this rather regrettable circumstance, the 'Burlington House of Rome' (as the Palazzo dell' Esposizione has been appropriately called) has finally been selected as the place of meeting. The vast enclosure on the level of the ground floor, known as the 'Gran Serra,' is now being fitted up, and 1500 seats, as a beginning, are in course of erection. 'As a beginning,' be it remarked; for already the number of 'congressisti' announced as expected by the Secretary General is fully 6000. It is contemplated to hold evening sittings, and for this purpose forty lamps furnished with electric light are in preparation. In the *locali* of the upper floor of the Palazzo the 'Esposizione Internazionale d' Igiene e Prodotti Medicali' will be accommodated, space having been found for the specimens contributed by the 500 exhibitors. Nothing can exceed the almost febrile activity with which these preparatory works are being prosecuted, while the new *locale* has certainly this advantage over the Policlinico that it is much more central—much nearer the principal hotels—and within easy hail of cab, tramcar, and omnibus. The proximity of the 'International Exhibition of Hygiene and Medical Products' to the seat of the Congress is another convenience secured by the arrangement finally come to for the economy of time and the cost of conveyance."

THE OPIUM COMMISSION.

THE Indian papers continue to give their readers accounts of the proceedings of the Opium Commission in that country, with an abstract of the evidence given before it. As regards the latter, we may say that it is becoming nearly as monotonous as the ringing of a bell. Some of the evidence is one way and some the other, no doubt; but there is really no necessity for proving that the abuse of opium leads to disastrous consequences. A Special Commission to India was not necessary to establish that fact. The question really is—whether the drug as ordinarily used is productive of injurious consequences, and whether examples of its immoderate use, when it is productive of injury, are of such common or frequent occurrence as to call for the adoption of prohibitive measures. We are bound to say that the preponderance of the testimony is altogether the other way. An officer who had long and large experience of soldiers of the native army among whom opium was habitually consumed in moderation remarked that, speaking generally, the drug appeared to affect the native soldier neither more nor less than tobacco did the English soldier.

Brigade-Surgeon-Lieutenant-Colonel Hooper, Civil Surgeon, Lucknow, and superintendent of the lunatic asylum of that city, who had had twenty-nine years' experience of the habits of the people of Lucknow, Azamgarh, Allahabad, and Benares, declared that the tendency to use opium in excess was slight, and certainly nothing in proportion to the tendency to excess in alcohol, to which a number of people would resort if deprived of opium by restrictive measures. The moderate use of the drug had the effect of increasing the power of endurance under hardship and exertion, and of maintaining health under privation, cold, and damp. Restrictive measures affecting its sale and use would most probably be resented by the people and create great discontent. So long as human nature is what it is, and the craving for something over and above the things allowed in rigid conformity with the rules of what to eat, drink, and avoid exists, we may well hesitate before we encourage the habitual indulgence in something worse than opium by the prohibition of the use of that drug.

DEATH CERTIFICATION OF CHILDREN.

THE details of a case recently investigated by the National Society for the Prevention of Cruelty to Children reminds us once more that even greater care than is usual must occasionally be exercised with regard to the death certificates of some poor children. As medical practitioners will be the first to admit, the diagnosis of wasting disease due to natural causes, as distinguished from that which is caused by criminal neglect, is at times almost impossible. Especially is this true of cases in which the opportunities allowed for previous attendance and examination have been few, and where, too, there may have been actually present some definite symptom of disease, which is capable of diverse interpretations in respect of its origin. We would, therefore, again strongly impress upon our medical brethren the advisability, nay, the duty, of exercising in every doubtful case where suspicion of culpable treatment exists, their right of refusing to certify the cause of death until the coroner shall have had the option of holding an official inquiry. We need hardly add that the fact of insurance in any such case ought not to be overlooked in considering the question of motive.

THE NATURE OF THE GERMICIDAL CONSTITUENT OF BLOOD-SERUM.

A VALUABLE article on this subject by Drs. Vaughan and McClintock appears in the *Medical News* (Philadelphia) of Dec. 23rd, 1893. The successful researches of Buchner in 1890 led many other investigators to enter this field of experimentation, and some of them have made valuable contributions to our knowledge of the germicidal action of the blood under varying conditions; but, so far as the nature of the germicidal constituent is concerned, little or no progress has been made. After giving a most exhaustive summary of the work which has been done on the subject and making a careful and critical study of it, Drs. Vaughan and McClintock come to the following conclusions: (1) The serum albumen is not the germicidal substance in blood-serum. (2) the germicidal substance must belong to the proteids otherwise it would be difficult to explain the fact that a temperature of 55°C. renders blood-serum inactive. (3) the only proteid likely to be present in blood-serum and which is not destroyed by peptic digestion is nuclein. Having reached these conclusions the following questions naturally present themselves: 1. Is there a nuclein in blood-serum? 2. Has this nuclein, if there be one, germicidal properties? These questions Drs. Vaughan and McClintock have attempted to answer. The serum was obtained from healthy dogs and rabbits by processes which are too lengthy to detail here; and they succeeded in demonstrating that blood-serum does contain a nuclein. Its relation to the fibrin ferment they hope to investigate at some future time. In proceeding to determine whether or not this nuclein has germicidal properties the solution was distributed in sterilised test-tubes, five cubic centimetres being placed in each tube. These tubes were inoculated with different germs and plates in order to test the germicidal action. The solution of nuclein was thus shown to have marked germicidal properties, and the experimenters were able to demonstrate that the germicidal constituent of blood-serum can be isolated. This has an important practical bearing. Blood-serum therapy has proved impracticable on account of the large amount of the fluid which must be injected. Nuclein therapy may possibly enable us to avoid this difficulty, but further investigations will have to be made before any definite conclusions as to its value can be reached.

THE CARE OF THE SICK POOR.

AN inquiry has been recently held by the city coroner of Liverpool touching the death of Honora Collins, a widow aged fifty-six. She and her son had been tenants at No. 2 house, No. 10 Court, Gibraltar-row, for two and a half years. Her son said the deceased was of steady habits. The rent had been paid up to two months previously. The landlord gave notice to quit and emphasised it by taking off the door and taking out the window of the kitchen, where, however, they continued to live, till a pain in the side attacked the mother. After a fortnight's illness a priest was called in. He advised that the dispensary medical officer should be sent for. This was not done till about half-past one the next morning. The medical man declined to go, on the ground that the patient had been ill for a fortnight. When the son returned the mother was dead. The jury exonerated the medical man. The case is another sad illustration of the imperfection, not to say the inhumanity, of our laws for the care of the sick poor. Society expects the medical profession to do its duty as the good Samaritan at night; to do it justice, it has practically done so unrewarded and unthanked. But it is high time that an organised arrangement was instituted for such cases. We have constantly urged this, and it cannot be much longer deferred.

A HOSPITAL FOOTBALL SATURDAY.

THE movement for instituting a Hospital Football Saturday continues to make headway, and we may expect soon to hear that it has assumed definite shape. We have only to take into consideration a few facts to see that such a scheme might result in a splendid *coup* for the hospitals. On Saturday last the thirty-two clubs who are competing for the English Association Cup met, and it was estimated by a sporting paper that the combined crowd of spectators at the sixteen matches comprised not less than 120,000 people. Nor is this surprising, for it is notorious that the great League matches draw galleries every week, and very enthusiastic ones, varying from 5000 to 15,000 persons, the fluctuations being dependent upon the position occupied by the clubs in the northern competition and the accessibility of the ground. And while these star-contests attract onlookers in enormous masses, all over the country every Saturday there are being played cupties and friendly matches under both rules, of local interest only, in which, however, thousands are actually engaged, while every game has its spectators. If the secretaries of the various clubs and the managers of the various organisations, leagues, and associations can fix upon a day on which such portion of the aggregate receipts as may seem good to them shall be handed over to the Hospital Saturday Fund we believe that the highly substantial augmentation of the funds of that charity will prove a remarkably practical testimony to the widespread and, on the whole, well-deserved popularity of the winter game. We see that at the meeting of the Charity

Cup Committee on Wednesday last under the chairmanship of Sir Reginald Hanson, M.P., the originator of the competition, after distributing £210 between twenty-seven charities, it was decided to support the scheme for a Hospital Football Saturday.

THE LATE DR. T. CRANSTOUN CHARLES.

WE regret to announce the unexpected death of Dr. T. Cranstoun Charles, Lecturer on Practical Physiology at St. Thomas's Hospital. Dr. G. S. Dale, who was called to the deceased, gave it as his opinion that death had taken place some hours before his arrival. A post-mortem examination showed the heart to be much dilated and the stomach to be greatly inflamed; but the witness could not give a decided opinion as to the cause of death until an analysis of the contents of the stomach had been made. Amongst several minor contributions to literature Dr. Charles was the author of a work on physiological and pathological chemistry.

THE TREATMENT OF INFLUENZA.

THE appearance in another column of a further contribution from Mr. Crerar upon the subject of influenza recalls his previous communication made during an earlier outbreak of the disease, not only in its subject-matter, but in the confident tone of the writer. On the first occasion Mr. Crerar may have been pardoned for taking so sanguine a view of the efficacy of the simple remedy which he brought under the notice of the profession, and after the prolonged experience which he must since have had, he seems to have retained his former enthusiasm for this drug. We would, however, venture to point out, for the comfort of those who have not had the same results as Mr. Crerar, that he seems to be unable to account for such divergencies save on the well-worn formula that the drug has not been administered in the way it should have been.

SIR HENRY ACLAND ON WORKHOUSE NURSING.

AT the Mile-end Infirmary on Wednesday, Jan. 24th, a new departure in the matter of nursing was celebrated by the guardians. They have lately undertaken the training of their own nurses, requiring from them a twelve months' course of training and the passing of an examination. In this case the examiner was Mr. H. Percy Dean, M.S. Lond., F.R.C.S. The interest of the occasion was heightened by the presence of Sir Henry Acland, who was supported by the board of guardians, and amongst others by Dr. J. H. Bridges, late medical inspector of the Local Government Board, Dr. Glover, Mr. Spencer Charrington, M.P., formerly chairman of the board, and Mr. Isaacson, M.P. Mr. Edwin Kerwin, chairman of the board, presided, and gave an account of the nursing movement in the hospital, which had been suggested and carried through by Dr. A. H. Robinson, the medical superintendent of the infirmary. Sir Henry Acland distributed the prizes, and before doing so enlarged on the development of the nursing system, saying it was only a part of the ever-widening sphere open to women in this age. He insisted on the importance of training and observed that in the Marylebone Infirmary three years were required before the nurses received a certificate and that the same amount of training was required by the nursing association presided over by the Princess Christian. He spoke of the honourable position of a nurse and said it was a calling followed by many women of rank and station. He defended the registration of nurses. Finally he enlarged upon the office of the guardians, who in trying times had to administer the Poor-law and bear the brunt of the problem of the unemployed. Dr. Bridges gave a very interesting *résumé* of the reformation of the treatment of the sick poor and especially of the nursing in workhouse infirmaries. Dr. Glover spoke about the importance of character and sympathy in nurses who as strangers in homes were entrusted with the greatest responsibilities of life and death. In the end a vote of thanks was accorded to Dr. Robinson for his unpaid and valuable work in teaching and training the nurses.

IS "ICE-CREAM" TO BE REGARDED AS "MILK"?

A GLASGOW case, of some importance from a sanitary point of view, has just been settled in the High Court of Justiciary. Its prominent features were these: during last summer and autumn some cases of enteric fever were found to have been caused by the use of "ice-cream," and at the same time some very unsavoury revelations were made in the public prints as to the manner in which the manufacture and storage of ice-cream are carried on, particularly in the overcrowded and dirty dwellings of foreigners, into whose hands the trade has largely fallen. In order to bring these dealers under the sanitary regulations applicable to purveyors of milk, the Glasgow local authority brought a test case before the Sheriff's Court and won it; the Sheriff's decision was reversed on appeal by the higher court, and has been quashed. A man who sells ice-cream, therefore, which consists almost entirely of milk, with a little flour and flavouring, is not a "purveyor of milk" in the sense which the statute requires (Contagious Diseases (Animals) Act—Dairies, Cow-sheds, and Milk-shops Order of 1885). There is a manifest absurdity here, and the sanitary authorities would do well to obtain powers of regulation and registration as soon as possible, though, as was pointed out in the Lord Justice Clerk's decision, the all-round application of such powers might press hardly on hotel keepers who might supply milk even for tea or coffee, or grocers who sold condensed milk, and on confectioners who used milk, even in small quantities, in the manufacture of sweets.

LADIES' HEALTH SOCIETY OF MANCHESTER AND SALFORD.

THIS society deserves a few lines of notice from us. It has existed for thirty-one years, and owed its birth, we are told, to the suggestion of the late Mr. Thomas Turner, the eminent surgeon of Manchester, who was impressed, as all medical men must be, with the profound ignorance of sanitary subjects among the poor. It consists of thirty-six ladies and twenty health visitors, who divide Manchester and Salford amongst them into twenty-six districts. The health visitor is taken from the class of working women. Her duty is to visit from house to house; to carry carbolic powder with her, and leave it where it is needed; to sell carbolic soap; to direct the attention of those whom they visit to everything unwholesome in their dwellings; to give hints to mothers on feeding and clothing their children; to give help where they find sickness; to urge cleanliness, thrift, and temperance; to encourage the attendance of children at schools and of adults at places of worship; and to report generally on the mode of living and on cases of sickness of the families visited. The health visitor attends mothers' meetings with the lady of the district, and generally coöperates with her. About three years ago the corporation requested the Ladies' Health Society to undertake the superintendence of some women on behalf of the corporation, which the society gladly did. The society acknowledge the constant courtesy and help of Dr. Tatham, and greatly regret his removal. It is obvious that a society with such objects, and composed of ladies and women in sympathy with the poor, and having free access to them, must do much good. In one quarter 973 special visits were made to cottages—that is, visits on behalf of the medical officer in cases of infectious sickness or death—and 7676 ordinary visits. The amount of carbolic acid soap sold is significant. One health visitor sold during the year 10 cwt.,

and about 500 penny bath tickets, besides distributing a large quantity of carbolic powder. A society with such objects and so trusted by the corporation of Manchester and by Dr. Tatham appeals strongly to all benevolent people, for support, of which we gather it is much in need.

DEATH OF PROFESSOR AUGUST HIRSCH.

IN Professor Hirsch, who died on Jan. 28th, the world has lost one of the most notable and learned members of our profession. Born at Dantzic in 1817, and not commencing the study of medicine until 1839, he practised for seventeen years in his native town. It is remarkable that during this period he should have found time and opportunity to prepare the famous history of medicine which, under the title of "Historico-Geographical Pathology," first appeared in 1859. This great work gave an impetus to the study of the subject, and in 1863 Professor Hirsch was appointed Professor of Medicine at the University of Berlin. The second edition of this book, which appeared about ten years ago, was translated into English by Dr. Creighton and published by the New Sydenham Society.

THE INTERNATIONAL SANITARY CONFERENCE OF PARIS.

WE are now able to name some of the principal delegates who have been appointed to represent the various Governments at the International Sanitary Conference which will open in Paris on the 7th inst. For Great Britain: Mr. Constantine Phipps, Minister Plenipotentiary attached to H.M. Embassy in Paris, and Dr. Thorne Thorne, C.B., Medical Officer to the Local Government Board. For British India: Surgeon-General Cuningham, M.D., C.S.I., formerly Sanitary Commissioner with the Government of India. For France: M. Barrère, Minister Plenipotentiary; M. Hanotaux, Minister Plenipotentiary; Professor Brouardel, Professor Proust, and M. Monod, Director of the Public Health Service of France. For Germany: Herr von Schoen, of the German Embassy in Paris, and Herr Mordtmann, of the Sanitary Board of Constantinople. For Holland: Dr. Ruysch and M. de Stuers. For Russia: M. Michel de Giers, together with technical delegates. For Austria-Hungary: Count Kuefstein, Dr. Hagel, of the Sanitary Board of Constantinople, and Dr. Karliuski. For the United States: Dr. Edward Shakespeare, Dr. Stephen Smith, and Dr. Bailhache. For Greece: M. Criésis, Charge d'Affaires at Paris, and M. Vafiades, of the Sanitary Board of Constantinople. For Italy: the Marquis de Malaspina and Dr. Pagliani, Director of Public Health in the Ministry of the Interior at Rome. For Portugal: M. Navarro, Portuguese Minister in Paris. For Sweden and Norway: M. Due, Minister in Paris. For Turkey: Tuskan Bey, Minister Plenipotentiary; Nouri Pasha, of the Constantinople Board; Boukowski Pasha, and Dr. Haindy Bey. For Persia: A delegate yet to be appointed by the Persian Ministry in Paris. For Egypt: Achmet Pasha Choukry, M. Mieville, President of the Alexandria Board, and Sedky Pasha, of the Sanitary Department at Cairo. The remaining countries—Belgium, Denmark, and Spain—have not yet announced their delegates.

FOREIGN UNIVERSITY INTELLIGENCE.

Berlin.—Dr. Winter has been promoted to an Extraordinary Professorship of Midwifery and Gynæcology. Drs. Lassar, E. Remak, J. Veit, and P. Güterbock have been granted the titular rank of Professor.

Bologna.—Dr. Martinotti of Siena has been appointed to the chair of Pathological Anatomy in succession to Dr. Taruffi.

Florence.—Dr. Acconci of Turin has been recognised as *privat-docent* in Midwifery and Gynæcology.

Gratz.—Dr. Wilhelm Prausnitz of Munich has been appointed Extraordinary Professor of Hygiene.

Innsbruck.—Dr. W. Czermak has been promoted to the chair of Ophthalmology in succession to Dr. Borysiekiewicz.

Prague (German University).—Dr. Alphons Edler von Rosthorn has been promoted to the Chair of Midwifery and Gynæcology.

Rome.—Dr. Campana of Genoa has been appointed to the chair of Dermatology in succession to the late Dr. Manassei.

Vienna.—Dr. R. von Limbeck of Prague has been recognised as *privat-docent* in Medicine.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.

THE deaths of the following distinguished members of the medical profession abroad have been announced:—Dr. August Hirsch, Professor of Special Pathology and the History of Medicine, Berlin.—Dr. Frari, formerly Professor of Midwifery in the University of Padua.—Dr. Salem Pacha, formerly Assistant Director of the Cairo Medical School.—Dr. Madurowicz, Professor of Midwifery and Gynæcology in the University of Cracow.—Dr. Quaglino, Emeritus Professor of Ophthalmology in the University of Pavia.

THE fatalities which occurred in mines last year in the United Kingdom form the burden of a Parliamentary paper which has just been issued. These fatalities are tabulated in two sections—those classed under the Coal Mines' Regulation Act of 1887 and those registered under the Metalliferous Mines' Regulation Acts of 1872 and 1875. The number of deaths in coal mines amounted to 1056, whilst of accidents 847 were registered; in the preceding year the numbers under each heading were respectively 1016 and 806. The distinctive causes of deaths are classified. In the metalliferous mines the number of accidents amounted to 39, against 48 in 1892, and the deaths to 65, against 52.

THE next meeting of the Medico-Psychological Association will be held at the Randolph Hotel, Oxford, on the 15th inst., at 10 A.M., when Dr. J. M. Lindsay will take the chair, and the further consideration of the report of the Rules Committee will be gone into. At the ordinary meeting, to commence at 4 P.M., Dr. Weatherly will read a paper on "Our Trials and Troubles," after which Dr. Menzies will open a discussion on the Future Supply and Status of Asylum Nurses and Attendants, and the business will conclude by the reading of a paper by Dr. Chapman on the Causation and Increase of Insanity. The next examination for the certificate and the Gaskell prize of the Association will take place in July next.

THE committee of the Sunday Lecture Society, of which, as our readers are aware, the Right Hon. T. H. Huxley, F.R.S., is president, have issued the prospectus for the third series of lectures, which will commence on Feb. 4th and conclude on March 18th, and will be delivered at St. George's Hall, Langham-place. The lectures, seven in number, will deal with subjects which, whilst for the most part of scientific bearing, have also great interest for the general public. The discourses will be illustrated where necessary by experiments and by the use of the oxy-hydrogen lantern.

MR. JOHN MORLEY has been waited on by a deputation, with the object of urging upon him the expediency of obtaining a Government grant for the purpose of establishing a school of veterinary medicine in Dublin. It is stated that the right hon. gentleman, in view of the fact that a large part of Irish trade is concerned with the rearing and export of cattle, has intimated his intention of favourably considering the suggestion.

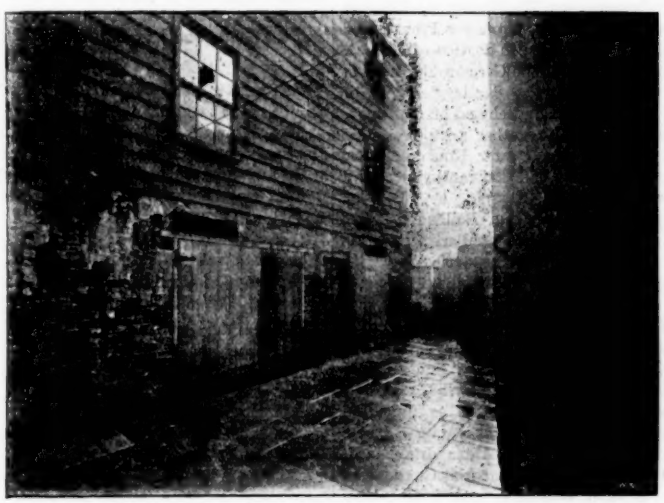
AT the first general meeting of the Life Assurance Medical Officers' Association, which was held at 20, Hanover-square, on Wednesday last, after the business of electing officers and the revision of rules had been despatched, Dr. J. E. Pollock delivered the inaugural address, which was listened to by a numerous and attentive audience.

THE opening ceremony in connexion with the new Medical Department of University College, Cardiff, will take place on Feb. 14th, when an address will be delivered by Sir Richard Quain, Bart., F.R.S. A dinner will be held in the evening, at which Dr. W. T. Edwards, J.P., will preside.

THE LANCET
Special Sanitary Commission
ON
PUBLIC HEALTH MEASURES AT SOUTHAMPTON.

PART III.

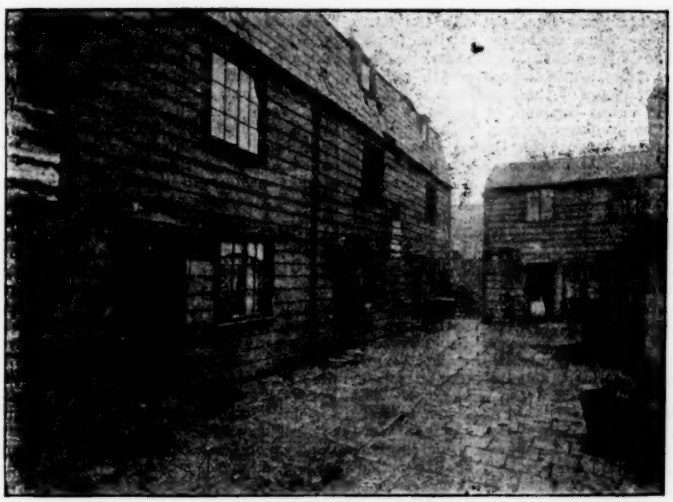
AS the passenger traffic at Southampton increases, the question of the meat-supply becomes a matter of more than local importance. Those great floating hotels, the trans-atlantic steamers, are not all provided with the meat of cattle slaughtered at Southampton. There is such ample railway communication from the docks to all parts of England that provisions can be conveyed to the ships from almost any of the great markets; nevertheless, a considerable quantity of meat is put on board that comes from the Southampton slaughter-houses. The travelling public, therefore, as well as the inhabitants of the town, are interested in the sanitary condition of the places where the cattle are killed. Unfortunately, this is one of the questions which has been overlooked. There are a great number of private slaughter-houses in Southampton, but there is no public slaughter-house. Not only have the authorities failed to build an abattoir, but they have not been able to enforce in the private slaughter-houses the majority of the rules and regulations which the Local Government Board deem to be necessary; yet this is a matter which, if ignored by the public at large, cannot be said to be ignored by the local authorities. So far back as 1891 Mr. A. Wellesley Harris, the local medical officer of health, devoted the greater portion of his annual report to the question of slaughter-houses. He gave a list of forty-three private ones and described their insanitary condition. We have now travelled over some of the same ground and can therefore also insist on the urgency of this question. A large number of the slaughter-houses are built simply of wood; others are built of wood and brick combined, with lathe-and-plaster walls. In some cases they form part of inhabited houses. An engraving, from a photograph, is given of one of these slaughter-houses. It is situated in a small blind court, and in a neighbourhood where small-pox was especially prevalent during the recent epidemic. On one side there are insalubrious dwelling-houses, and on the other side is the slaughter-house, which was formerly a dwelling-house. The upper walls, as will be seen from the engraving, are of wood, pierced by windows to give light to the private rooms. In the lower portion large doors admit the cattle, which are still slaughtered in this most unsuitable place. The houses in this court have no separate water-supply; there is but one common tap for all the inhabitants; and at the end of the court, close to the slaughter-house door, there is an open brick ashpit. Some of the houses in this court have been condemned as unsuitable for human habitation and have been closed by a magistrate's order. It is not appetising to think of meat coming from such a locality, and several other slaughter-houses are not more suitably situated. In many instances the flooring is most imperfect, being made with cobble stones or small pieces of pavement that do not fit one with the other and are not cemented. The blood and the filth sink into the earth. The walls, often of wood, cannot be properly cleansed. They are, of course, bespattered with blood, which cannot be washed off. It saturates into the porous wood, decomposes, and emits foul odours. Nor is there any efficient ventilation. With but few exceptions, the drainage of the slaughter-houses is equally defective. There are blood outlets with plugs inside and pipes communicating directly into the street sewer. In many cases there are cattle pens inside the slaughter-houses, where manure, in proximity to the carcasses, accumulates and causes considerable nuisance. In one instance, where pigs are slaughtered, the place is connected with a dwelling-house by two doors, and there is practically no ventilation. In another case there is an offensive wooden manure receptacle within ten feet of the window of an inhabited room. In one sense it is, perhaps, fortunate that the slaughter-houses should be in such a deplorable condition, for it precludes all hope of patch-work remedies; indeed, even the butchers themselves are beginning to recognise that it would be better to close their slaughter-houses altogether than to attempt to put them in



Slaughter-house with a Wooden Dwelling-house above the Shambles

decent order. Further, it so happens that Southampton possesses a suitable site for the construction of a public slaughter-house close to the cattle market, and it only requires a little more persuasion to convince the butchers that it would be infinitely better, and even cheaper, for them to take their cattle to a public abattoir than to convert the miserable shanties in which they are now killed into isolated, well-paved, well-drained, and properly ventilated private slaughter-houses. One or two prosecutions and one or two convictions would still further accentuate the growing demand for a public abattoir. There is also, as a further inducement, the probability that a larger business would be done in providing ships with meat if it could be conveyed on board directly from a model slaughter-house where every guarantee of wholesomeness and cleanliness would exist.

We have already given some details concerning the slum property at Southampton. It remains for us to add that the medical officer of health has now presented to the town council a very elaborate report, accompanied by large-sized ordnance maps, on this property. The extent and the difficulty of dealing simultaneously with so many dwellings are somewhat appalling. We have before us full details concerning 659 houses, and though they are not all equally bad it would undoubtedly be a great improvement if it were possible to pull them down. The engraving, which is from a photograph, represents another set of houses which, unlike those in Blue Anchor-lane,[1] have not the excuse of being picturesque. This is a blind court, consisting of a few wooden cottages. Between the door and window of one of the cottages a piece of the wooden wall has fallen off, disclosing the fact that the wood is supported only by lath and plaster. Two of the houses are already closed as being unfit for habitation. There is no ashbin, so that the household refuse is scattered about the court, and there is but one common water-tap, which is, of course, also situated in the court. The rooms in the cottages are very small and damp, their cubic capacity being 554, 744, and 891 feet. Only two rooms in the whole court are a trifle larger than the last-named. These rooms are not only small, damp, and dilapidated, but they have no through ventilation, so that they can never be rendered really healthy. In another part of the town we examined three houses looking on to a dark covered passage. The middle house could only obtain light from openings in the roof. In one case we found a public sewer passing under a row of private and inhabited houses. To reach another dwelling it was necessary to enter a passage only eighteen inches wide, and here was the door, close to which was the window, measuring twenty-six inches by twenty-two inches. The ceiling of the passage was only six feet six inches from the ground, so that the light and air admitted through this window were of a very doubtful character. Yet in the vicinity there was a good deal of vacant land where proper houses could be built. The 659 houses signalled out by the medical officer of health had a population, when the inquiry was made, of 2599 persons, which represented a crowding together of 441·4 persons per acre. In such districts of Southampton as Portswood the population is only 14·5 per acre, and the average of the entire borough is 32·4. There are in Southampton altogether 17,838 houses, of which, as already stated, 659 might be dealt with as more or less unfit for habitation. It is evident that this will necessitate the drawing up of a large scheme; but some of the expenditure necessary might result in profit. This would be still more likely to occur if, instead of destroying Blue Anchor-lane, the beautifully picturesque mediæval houses it contains were restored, and if some of the neighbouring modern slums were pulled down and gardens laid out on the vacant space. As this site would comprise the best part of the old city wall and the remains of King John's Palace it might, with Blue Anchor-lane as a kind of central bazaar, be converted into a sort of show place where open-air concerts could be given in the summer, a charge being made for admittance. Southampton has a very large park in the middle of the town, where there is absolutely nothing to be seen. Perhaps a small portion of this park might be sold for building purposes on condition that the proceeds were devoted to the opening of another breathing space round Blue Anchor-lane, where it is much more needed and where there would be picturesque and instructive architectural and historical remains to be seen. With all the resources that Southampton possesses it is only necessary to take full advantage of these local opportunities to find means of lightening the cost of the very urgent and necessary improvements that have to be accomplished, and that without further delay.



Blind Court of small Wooden Cottages.

[1] THE LANCET, Jan. 6th, 1894.

THE GERMAN HOSPITAL.—On the 26th ult. Baron von Schröder presided at the annual court of governors of this hospital, which was held at the Cannon-street Hotel. The report read at the meeting stated that during the past year 1456 patients had been treated within the walls of the institution, whilst the number of out-patients (including those who applied for relief at the western and eastern dispensaries) amounted to a total of 25,747. The receipts from all sources reached £10,662, whilst the expenditure was represented by the sum of £10,407. The chairman moved the adoption of the report, and remarked that persons of all creeds were admitted and enjoyed full liberty in religious matters.

THE MORTALITY FROM CANCER.

"HAS there been any Increase in the Mortality from Cancer during the last Thirty Years?" is the title of an elaborate paper by Mr. Geo. King, F.I.A., and Dr. Arthur Newsholme, which has been recently published in the Proceedings of the Royal Society.[1]

The paper commences with a quotation from the official figures of the Registrar-General, which show that the registered death-rate of males from malignant disease was 2·7 times, of females 2·0 times, and of both sexes together 2·2 times as high in 1891 as in the average for the decade 1851-60. That this registered increase corresponds with a real increase is shown to be the generally accepted view, even the annual reports of the English Registrar-General stating eventually that "it must be admitted, as at any rate highly probable, that a real increase is taking place in the frequency of these malignant affections." The necessity for an independent investigation of the subject forced itself upon Mr. King and Dr. Newsholme, among other reasons, because cancer is *par excellence* a disease of mature life, and as a larger number now survive in this country to mature life than formerly a fair comparison could not be made with the death-rate from cancer per million living at all ages thirty years ago, or with the corresponding death-rate in other countries at the present time. The average age of females in England and Scotland is higher than that of males, while the converse is the case in Ireland; and the average age of the population in Ireland is much higher than in either England or Scotland. Consequently the death-rates from cancer given by the Registrar-Generals of the three divisions of the United Kingdom in their annual reports are unduly unfavourable to the female sex in Great Britain and to the male sex in Ireland; and similarly the death-rate from cancer in Ireland is exaggerated as compared with that of the sister kingdom. In reinvestigating this subject, therefore, Mr. King and Dr. Newsholme took care to eliminate all errors due to varying age distributions of the populations under investigation at different periods or in different countries. This was effected by ascertaining the death-rate from cancer at each group of ages, and then applying this in each case to a standard population; that of the "English Life Table, No. 3, Persons," being taken for this purpose. This process was applied to the official figures for England and Wales, Scotland, and Ireland, and to some very valuable figures obtained from the experience of the Scottish Widows' Fund Life Office. The latter extended over four septennia and a broken period of four years; and, with a view to uniformity, the figures from the three countries named above were arranged in similar periods. By this process there was obtained in each case the number of deaths from cancer per annum among 1,000,000 persons aged twenty-five years and upwards. The importance of this elimination of errors arising from variations in the age distribution of the populations is evident from the fact that, while by the uncorrected figures Ireland stands a little above England for the first two periods and a little below it for the other three, the corrected figures show that Ireland stands below England throughout, so that in the first two periods the position of the countries is reversed by the correction, and in the last three periods the difference in favour of Ireland is very great indeed. It is evident that the ordinary method of presenting the statistics exaggerates the rate of cancer in Ireland as compared with England, a result which might have been expected, owing to the age distribution of the populations of the two countries.

Mr. King and Dr. Newsholme then proceeded to translate the figures into a graphic form, the results for single years being obtained from those for septennia by curves, the method of forming which is described in the paper. This method was first used by Joshua Milne in the construction of his "Carlisle Life Table"; but it has never previously been applied, we believe, to medical inquiries. The accuracy of the method has been demonstrated by Mr. King in two papers in the Journal of the Institute of Actuaries.[2] Of the curves thus obtained the Irish are the lowest, probably because medical attendance in Ireland, owing to poverty, is on the average more meagre than in Great Britain. The English curves for males and females are very far apart. The Scottish curves for the two sexes are nearer together than the English, the apparent cancer mortality in Scotland for males being higher and for females lower than in England. The greater propinquity of the Scotch male and female curves may be ascribed to more correct diagnosis and certification in Scotland than in England. This view does not, however, explain why the female English is higher than the female Scotch curve; and it must be assumed, therefore, that there is some condition more favourable to the causation of cancer in the case of English than exists in the case of Scotch women. The Scottish Widows' Fund Life Office curve has the easiest gradient of all, probably pointing to more accurate diagnosis and certification than for the whole country, especially at the earlier periods. Mr. King and Mr. Newsholme contend that the view that the apparent increase of cancer is at any rate chiefly due to improved diagnosis is shown by a comparison of the male and female curves respectively. They run practically parallel throughout. If cancer had really increased, its increase would probably have been an approximately equal percentage in the two sexes, and consequently the curves would have grown further apart. Even if—assuming that a real increase of cancer had occurred—the increase were unequal in amount in the two sexes, it is highly improbable that it would have been of such a distribution as to maintain the parallelism of the male and female curves. So far, the argument that the increase in the registered mortality from cancer is due to more accurate diagnosis and certification of deaths is based on the facts that during the thirty-two years under investigation—(1) the increase of cancer among insured lives, in the experience of the Scottish Widows' Fund Life Office (where improved diagnosis and certification would probably have smaller play), has been much less than that in the general population of Great Britain and Ireland; and (2) the curves of male and female mortality do not show a wider distance apart, as they would have done had the increase in cancer (as might have been expected) been shared to an approximately equal extent by the two sexes.

Mr. King and Dr. Newsholme point out that the essential weakness of these figures lies in the absence of distinction between carcinoma and sarcoma, and in the absence of statement of the part of the body primarily affected by malignant disease. The latter defect they then remedy by giving the accurate returns for Frankfort-on-the-Main, in which for a long series of years deaths from cancer are classified according to the part of the body primarily affected. These deaths are then classified in three groups: (1) "accessible cancer," comprising cancers of external parts of the body and other parts in which the nature of the disease is easily demonstratable during life by physical examination; (2) "inaccessible cancer," comprising cancers of internal parts and other parts in which, as in the case of cancer of the bones, diagnosis is less easily made; and (3) "cancer, position undefined." The last group does not vary greatly in size, so that no fallacy is introduced on this account. The number of deaths from "accessible" cancer among males in each group of years is small; but the figures for females are on a sufficiently large scale to enable a valid comparison to be made, and this comparison shows that in those parts of the body in which cancer is easily accessible and detected there has been no increase in the mortality from it between 1860 and 1889. On the other hand, the rates of mortality from "inaccessible" cancer, both for males and females, steadily rise, though, perhaps, not quite so rapidly as in the United Kingdom. One very remarkable fact becomes apparent—namely, that males and females suffer almost equally from "inaccessible" cancer, the average for the thirty years being 1641 for males and 1640 for females. The excessive mortality from cancer of females is confined to "accessible" cancer—that is, practically to cancer of the female sexual organs.

The classification of cancer into "accessible" and "inaccessible" is admittedly imperfect. Thus, cancer of the rectum is included with cancer of the rest of the intestine, under the head of "inaccessible" cancer. It is shown, however, that when cancer of the rectum is extracted separately there has been no increase in the rate of mortality from it, a result which must intensify the already marked contrast between "accessible" and "inaccessible" cancer, and confirm the general conclusion arrived at by Mr. King and Dr. Newsholme that the supposed increase in cancer is only apparent and is due to improvement in diagnosis and more careful certification of the causes of death.

[1] Vol. liv. [2] Vols. xxiv. and xxx.

CHOLERA.

LITTLE or nothing has been heard recently as to the existing cholera epidemic. The disease is stated, however, to have been quite recently prevalent at Namur, where it first declared itself on Dec. 10th last. Between that date and Jan. 25th there were 23 fatal cases, and there are still a few cases under treatment in the infirmary and at their homes. According to the National Health Committee the outbreak at Namur is attributable to pollution of the river Sambre from the hospital at Charleroi, at which place there were cases of cholera last autumn. The disease has since appeared at various places on the banks of the Sambre between Namur and Charleroi.

As regards the recent occurrence of cholera at Tripoli, it appears that it broke out in the military barracks at that place. From Nov. 10th to Dec. 14th there were 104 cases and 71 deaths. Energetic action was promptly taken by the local authorities to limit its spread; the disease gradually diminished and has now completely disappeared.

THE OFFICIAL REPORT OF THE PARIS CHOLERA EPIDEMIC OF 1892.

(FROM OUR SPECIAL CORRESPONDENT.)

IT may seem rather late in the day to deal with the Paris cholera epidemic of 1892, particularly as its existence was first announced in the columns of THE LANCET. Early in July of that year, though the presence of cholera in Paris was strenuously denied, I was able to send many and very full details concerning the epidemic. Now there lies before me the official acknowledgment of the accuracy of what was then stated in THE LANCET. The Paris Prefecture of Police has issued an official report on the Paris epidemic illustrated by numerous maps and diagrams, notably a diagram representing the daily mortality in Paris and its suburbs, which were published on Oct. 1st, 1892 But if there is much in this report that is already known there are also amplifications and new details that are of considerable theoretical and practical importance. The report deals systematically with every district affected, commencing, of course, with the Nanterre House of Detention. The average population of this prison from April 4th to Oct. 9th, 1892, was 3571, and there occurred in it during that period 73 cases and 59 deaths from cholera, which is equivalent to 204·4 cases and 164·9 deaths per 10,000 inhabitants. The report concludes that the epidemic, though first discovered in the Nanterre prison, could not have commenced within its walls. If it was, as was alleged by some, due to the revivification of the germs of the 1884 epidemic this can scarcely be applicable to the Nanterre House of Detention, for it had not been built at that date, and beggars and vagabonds who are now incarcerated there were in 1884 sent to the Dépôt de Mendicité at St. Denis. They certainly suffered severely from cholera in 1884, but at St. Denis and not at Nanterre. Nor does the reporter believe that cholera was conveyed to the prison by persons or goods coming from infected countries. It was on June 4th that the disease reached Baku, on the Caspian Sea. In April there was no cholera in Europe, except at Paris, and there was no one at Nanterre who had come from Tonquin, India, or other places likely to be infected. A very careful inquiry has also established that none of the materials used for the workshops &c. of the Nanterre prison had been imported from abroad. The first three cases all occurred in the same manner. They were all three of them mendicants who had been allowed to visit friends and were seized with cholera on their return to the Nanterre asylum. The first death happened on April 5th; but outside the prison a young girl from Puteaux close to Nanterre, who had had no dealings with the inmates of the Nanterre prison, was taken ill on the 8th and died from cholera at the Beaujon Hospital on the 10th. On the 11th a man died suddenly from cholera at Puteaux, and on the 10th the disease broke out among some bargemen at the Ile de St. Denis. Thus it seems very clear that cholera existed in the western suburbs of Paris and was imported into the prison or asylum of Nanterre by inmates who had been allowed out on leave and had visited the infected suburbs of Paris, where they had been drinking water from the Seine. Each of the three inmates on his return infected some of the other inmates at the prison. A plan is given of Dormitory No. 3. Here the inmate Hervy returned at 8 P.M. of April 6th, after a leave of absence. An hour later he was seized with cramps and vomiting. He soiled the neighbouring bed and died in a few hours, before he could be transported to the infirmary. The occupant of the neighbouring bed also died from cholera, and in that one dormitory, where 100 persons slept, there were from April 6th to the 13th twenty-six cases of the disease. A plan of the dormitory shows that, for the most part, the victims slept in the beds nearest to the bed No. 24, occupied by Hervy. If the dormitory be divided into two parts, it will be found that twenty out of the twenty-six cases occurred on that side of the dormitory where Hervy slept. Only two of the patients recovered.

In the Seine, near St. Denis, there are two islands, and just between these there is the second main sewer outfall. This is very clearly shown in the map which was published in THE LANCET on Aug. 12th, 1892. At this point the maximum contamination is reached. The analyses which were published with the map demonstrated that whereas the Seine water has from 7 to 9 cubic centimetres of oxygen per litre and about one gramme of nitrates before it reaches Paris, it contained at the St. Denisbridge 98 grammes of nitrates and only 1·02 cubic centimetres of oxygen. Now it was just at this point and among the floating population of bargemen that some of the very first cases of cholera occurred. At Dunkirk and elsewhere we were able to show that there was an exceptional frequency of cholera among the occupants of barges moored near sewer outfalls. The proportion of deaths at Isle St. Denis was 39 per 10,000. There were only two other communes, Aubervilliers and St. Ouen, where the proportion was higher—namely, 54 and 55 per 10,000; but these adjoin one another, and all three districts touch each other. I advanced the view, at the time, that cholera was chiefly confined to those communes which derived their water-supply from the Seine after it had passed through Paris; the Prefecture of Police now publishes some very excellent maps confirming this opinion. One map shows the percentage of communes where there were at least some cases of cholera according to water distribution. Of the suburban communes south of Paris, that is to say before the Seine enters its walls, 45 per cent. were affected; of the communes watered by the River Marne 55 per cent. were attacked. Of those watered by the Seine after it had passed through Paris the proportion was 100 per cent.—in other words, not one escaped. The proportion of deaths due to cholera in these districts was only 2·7 per 10,000 for the first, or south of Paris, district, and 5·1 for the eastern, or Marne, district. Then, dividing the remaining western and northern districts into two zones, it is found that for the first subdivision, which is the furthest removed from the two main sewer outfalls, the proportion of deaths was 15·6 per 10,000, while for the other zone, where the contamination of the river was at its maximum, the proportion of deaths was equal to 36·4 per 10,000 inhabitants. Thus the connexion between the prevalence of cholera and the contamination of the River Seine seems to be very graphically demonstrated. This is further confirmed by another very instructive diagram. In this chart there are given the rainfall, the number of cases of cholera in Paris, the temperature, and the level of the water in the Seine for every day from April 15th to Nov. 15th, indicating the exceptionally dry weather which prevailed till the end of August, and also that the Seine water fell to the minimum just as the epidemic reached its maximum. During the earlier part of August there was no rain at all; only a few cases of cholera had occurred, being at the most twelve in a day. Then, after the long duration of dry weather, there fell 10 millimetres of rain, and there were more than fifty cases of the disease. A day or two later there fell 38 millimetres of rain, and the number of cases again greatly increased, till they reached the maximum of eighty-seven on the last day of August. It will be noticed, however, that though there had been rain in Paris, the level of the Seine water continued to fall and reached its lowest point just at this time. The rain seems to have helped to diffuse the cholera germs, but was not sufficiently ample to oxidise or carry them away. It had also been preceded by the maximum heat. When, however the waters of the Seine began to

rise again the epidemic decreased, and with a rainy October and November, as they rose higher and higher, it disappeared altogether.

Many details derived from local evidence show the effect of the Seine water. Thus at St. Ouen, where cholera was so severe, one section of the population, being provided with water from an artesian well, was absolutely exempt. Again, the commune of Aubervilliers was free from the disease till the month of June; at that time water taken from the Seine near St. Denis was substituted for the water of the Marne. Then cholera broke out there also, and here and at St. Ouen the greatest number of deaths occurred. Within the walls of Paris itself the districts that suffered most were those nearest to these suburbs—namely, Port de Flandre, La Villette, and La Chapelle. There were deaths from cholera in all the twenty arrondissements of Paris. Those that suffered the least were the 2nd, the 8th, and the 9th—viz., the Bourse, the Champs Elysées, and the Faubourg Montmartre. Those that suffered the most were the 18th, 19th, and 11th—viz., Montmartre, La Villette, and La Roquette.

Altogether, the report published by the Paris Prefecture of Police is a very complete and useful one. It reflects great credit on its principal medical compilers, Drs. Dubief and Thoinot, but a large measure of praise is also due to M. Besançon, chief of the Second Section which is concerned with the public health.

THE HERMITTE SYSTEM OF DRAINAGE.

(FROM OUR OWN CORRESPONDENT.)

THE Hermitte system has been made the subject of experiments in America and in France, and now it is proposed to test the value of the process at Worthing. Briefly, M. Hermitte professes to convert sea water into a strong disinfectant, and then, by special conduits, to deliver this water to all the houses in order to flush the closets. Thus the treatment of sewage is to commence at the very starting point, and from the pan of the closet to the sewer outfall all sources of impurities are to be arrested and destroyed. This is to be done by the chlorine evolved in salt water by the action of an electric current. The town of Havre determined to give M. Hermitte every facility to carry out his process, and, at first, the experiments caused considerable enthusiasm. Buoyant hopes were entertained that a solution had been found for the difficulties which beset this town. Havre as I described when dealing with the cholera epidemic of 1892, drains its refuse into the gutter. When the water that conveyed the household slops and also the sewage from the closets had been charged with chlorine there was not only an absence of bad odour, but the gutters, always more or less black and soiled, were beautifully bleached. The kerb and flagstones became white, as if they had just left the quarry. The effect was drastic, and loud were the praises raised. The municipality of Havre, however, appointed a technical commission to inquire into the process. The following is an abstract of the description given by M. Hermitte of the works he established at Havre. These were situated at the Pont d'Angoulême, where the cost of labour, fuel, &c., amounted to 70 fr. a day. In England, where labour is not so cheap, this would have cost £3, or probably 3 guineas, per day. There were two steam-engines of 35 horse-power, and two complete and separate electrolysing machines, each carrying two electrolysers. Three rotary pumps propelled the liquid disinfectant up to a reservoir twelve metres above the works. There was a rotary pump to draw up the sea water and discharge it into the electrolysing tanks, and another pump to fill the reservoirs with electrolysed water. From these reservoirs the water could be delivered to the houses where the experiments were made. Under normal conditions each electrolyser should work as follows: 1200 ampères × 5·5 volts = 6600 watts; $\frac{6600\ w}{736\ w}$ = 8·96 electric horse-power; this + 20 per cent. = 10·75 mechanical horse-power. To this should be added the necessary force for the circulation and transmission pump, which gives a maximum of 12 horse-power for one electrolyser, or 48 horse-power for the four electrolysers. Under these conditions the normal production would be one kilogramme of chlorine (*chlore*) per hour per electrolyser, and this would give two cubic metres of liquid containing 0·5 gramme of chlorine per litre per hour, or four cubic metres of the solution at 0·25 gramme of chlorine per litre per hour. But M. Hermitte stated to the municipality of Havre that the velocity of the machinery was insufficient and that the average intensity of the electric current for each of the two electrolysers was: 925 ampères × 11·25 volts = $\frac{10,406\ w}{736\ w}$ = 14 electric horse-power; this + 20 per cent. = 16·8 mechanical horse-power. Adding to this the power for the pumps, the total reached was 18 horse-power for each of the two electrolysers. The installation produced on an average 1 gramme of chlorine per hour per ampère, or 925 grammes of chlorine per electrolyser, or, for the four electrolysers, 925 × 4 = 3700 kilogrammes of chlorine per hour. They were therefore able to produce one cubic metre of liquid containing 0·5 gramme of chlorine per litre in about eight minutes, and at the rate of 0·25 gramme of chlorine in four minutes. In the Rue d'Edreville a house with 35 inhabitants was supplied for the closets with 180 litres per twenty-four hours, or about 5 litres per inhabitant. In the Rue Fontaine a house with 30 inhabitants was supplied with 350 litres, or 11·5 litres per inhabitant, and there were 150 litres for some automatic flush tanks, or 500 litres in all—that is, an average of 16·5 litres per inhabitant. M. Hermitte thinks that there should be 20 litres per head at 0·25 gramme of chlorine per litre. He stated that he was able to guarantee a supply of 1 kilogramme of chlorine per hour per electrolyser for a motive power of 12 horse-power, which would be equivalent to 48 cubic metres of the disinfectant in the twenty-four hours at a strength of 0·5 gramme of chlorine per litre, or, as he seemed to prefer, 96 cubic metres at 0·25 gramme per litre.

Havre, Jan. 30th.

THE ALLEGED INCREASE OF INSANITY.

THE number of persons stated to be insane was first enumerated in England and Wales at the census in 1871, the number then returned being 69,019. At the two following censuses, in 1881 and 1891, the numbers so returned were respectively 84,503 and 97,383. Measured by the proportion to a million of the population, the ratio of the insane was 3034 in 1871, 3253 in 1881, and 3358 in 1891. The census returns therefore show that the ratio of insanity increased 7·04 per cent. between 1871 and 1881, and a further 3·23 per cent. between 1881 and 1891. Thus, while the ratio of existing cases of insanity to the population continues to increase, the rate of increase has considerably declined. The question whether the increase of existing cases of insanity really implies an increase in occurring cases of insanity has, however, never yet been satisfactorily answered. The general report on the census of 1891, recently issued, contains, however, some useful figures and deductions which go far to answer this question in a satisfactory manner. It is pointed out that the discharge rate, by death and recovery, among the insane within the cognisance of the Lunacy Commissioners, which averaged 19 per cent. annually in the years 1871–80, declined to 17·83 in the more recent decennium 1881–90. It is obvious that this marked decline in the discharge rate must have tended to accumulation, and it is therefore desirable to ascertain whether this decline in the discharge rate was sufficient to account for the increase in the number and ratio of existing cases of insanity between 1881 and 1891. The census report points out that, with an annual "discharge rate" of 19·0 per cent. of the insane living at the beginning of the year, it would require 689 new cases per million of the population in the course of each year to raise the ratio of existing cases from 3034 per million, as it was in 1871, to 3253, as it was in 1881; but to raise this ratio from 3253 to 3358, as it stood in 1891, would require, with a discharge rate of 17·83 per cent., an annual addition of only 661 new cases per million of population. These figures point to the conclusion that, assuming the census returns of the insane to be correct, or even equally incorrect in the two successive decennia, the proportion of new cases annually occurring in the population, instead of having increased, actually declined during the last intercensal period. This calculation assumes, as is admitted in the report, that the percentage of deaths and recoveries, there called the "discharge rate," was the

same among all the insane as it was among those within the cognisance of the Lunacy Commissioners, an assumption which—bearing in mind the large proportion which these bear to the total cases—is probably justifiable.

If the census returns, therefore, are approximately correct, which there is no serious ground to doubt, they point conclusively to increased accumulation of cases due to reduction of the death-rate of the insane, and to their consequent increased longevity. We should, therefore, expect to see a change in the age distribution of the enumerated insane, and this expectation is fully realised. The tables in the census report afford the means for showing that the ratio of cases returned as insane under forty-five years of age, to 1000 of population at the same ages, was 2·24 in 1871, 2·29 in 1881, and 2·26 in 1891. The proportion of the insane at these ages may, therefore, be said to have remained stationary during the twenty years 1871–91. A comparison of the ratio of insanity in the population above the age of forty-five gives, however, a very different result. Between forty-five and sixty-five years the ratio was 6·16 per 1000 in 1871, and rose successively to 7·20 and 7·83 in 1881 and 1891; and above the age of sixty-five years the successive rates were 6·95, 8·0, and 8·61 per 1000 respectively. The ratio at all ages above forty-five was 6·25 per 1000 in 1871, 7·40 in 1881, and 8·02 in 1891. Calculated in a different manner it appears that of the total cases of insanity returned in England and Wales 406 per 1000 were aged upwards of forty-five years in 1871, 429 in 1881, and 455 in 1891. The proportion of cases among the population aged under forty-five years had correspondingly declined successively from 594 per 1000 in 1871 to 571 and 545 per 1000 in 1881 and 1891 respectively. It is therefore beyond question that the longevity or mean age of the insane has increased since 1871, and that the recent increase in the number of existing cases of insanity is due rather to the survival of old cases through the decline of mortality than to the increase of occurring cases.

There is one other probable cause of the constant increase in the known cases of insanity, as judged by the census returns. This is the fact that the numbers are believed to be more correctly returned at each succeeding census, and it is beyond dispute that the total number of the insane thus returned, although probably still below the actual number, is nearer the truth than the number officially known to the Lunacy Commissioners. At the census in 1871, when the inquiry as to mental derangement was first made, the number of cases returned exceeded those known to the Lunacy Commissioners by 12,264, or 17·7 per cent.; in 1881 this reserve of cases unknown to the Lunacy Commissioners had fallen to 11,390, or 13·5 per cent.; and in 1891 the deficiency in the Lunacy Commissioners' returns had further declined to 10,583, or 10·9 per cent. These cases outside the official cognisance of the Commissioners constitute a reserve from which the asylum population is being constantly recruited, thus leading to erroneous impressions, based upon the statistics in the Lunacy Commissioners' reports, regarding the increase of insanity. There is still another cause in operation to raise the number of cases of mental unsoundness which are officially returned as insane. There have in recent years been inducements offered by the State which have led to the removal of troublesome cases of senile imbecility from workhouses to asylums, and these inducements have especially operated in the metropolis. Such transfers should not affect the census ratios we have been considering, but there is good reason to believe that many cases on the border line of imbecility would not in workhouses be returned as imbecile or idiot, whereas they would be so returned as soon as they were located in an asylum. Bearing therefore in mind all the above-mentioned considerations, there is very good ground for believing that the census statistics of the insane enumerated in 1891 afford satisfactory evidence that there was no real increase of insanity during the ten years 1881–90.

TUBERCULIN AS AN AID IN EXTINGUISHING BOVINE TUBERCULOSIS.

THOUGH Koch's tuberculin may be said to have disappointed the expectations to which the announcement of its discovery gave rise as a cure for tuberculosis in the human species, it has proved of eminent service in a direction which was not at first thought of, and may eventually be largely instrumental in eradicating that very grave malady from among the bovine species. It is well known that tuberculosis in cattle is extremely prevalent over nearly the whole world, and that it is especially frequent in the improved breeds; dairy cattle are almost decimated by it in some countries and localities, the number affected in some instances being reckoned as over 50 per cent. Indeed, it is its existence so extensively among these milk-producers that invests the scourge with such an alarming amount of interest, for it has long been an established fact that the disease is communicable, not only to healthy cattle by cohabitation with affected stock, but also from the bovine species to many different species of animals, some of these closely approaching mankind in anatomical and physiological attributes. Experimental and accidental demonstration of this truth has been rendered times without end, and in view of this a most painful anxiety has been excited as to the amount of danger mankind is exposed to from this great prevalence of tuberculosis in animals which supply us with such a large proportion of our food. From the manifold observations and experiments recorded it is generally believed that there is great danger incurred in consuming the milk derived from tuberculous cows, and though there is no trustworthy experimental evidence that tuberculous disease has been conveyed to people in this way, cases have been published from time to time which would go to prove that the danger is a real and serious one, and one that cannot and should not be ignored. If we are forced to believe, from the experimental and circumstantial evidence accumulated up to the present time, that the milk of tuberculous cattle is exceedingly dangerous to mankind, there is still much doubt as to the risks incurred by consuming the flesh of these animals, at least when it is free from tubercle. But even if we put the danger to the public health out of consideration, which of course we cannot do, there remains the fact that a most destructive disorder is widely prevalent among animals which are of the highest value to man, and which is annually causing a much heavier loss to the community than any other bovine disease does.

It is therefore imperative that sanitary measures should be adopted to check its ravages, unless we are disposed to allow our herds to be exterminated while we look helplessly on. The success which has attended the endeavours to get rid of foot-and-mouth disease and bovine contagious pleuro-pneumonia, first in Holland, then in this country and the Austrian Empire, inspires the hope that this tuberculosis of cattle is not unconquerable; and it might be affirmed that, judging from our knowledge of its nature and modes of dissemination, its eradication can be accomplished in the course of time if judicious measures are framed and energetically and persistently applied. At the same time it must be acknowledged that such a task is one of enormous proportions, and will entail almost incalculable expense and trouble, compared with which the "stamping out" of the two diseases just mentioned was mere child's play at a trifling cost.

Until recently the determination of the presence of tuberculosis in cattle has in very many instances been a matter of the gravest difficulty, if it has not been altogether impossible. Unless the disease was in an advanced stage and affected important organs, there were no means to decide whether an animal was or was not affected. True, in suspected cases, after Koch had discovered the micro-organism which produced tuberculosis, when the lungs were involved it was recommended to examine the expectorations gathered in the pharynx, or the bronchial mucus obtained by means of a sponge introduced into the trachea through an incision in that tube; or guinea-pigs could be inoculated with that material or fed with the milk of the suspected cows; but all these means required much skill and time and were otherwise unsatisfactory. Soon after the introduction of Koch's tuberculin, experiments were made with it upon tuberculous cattle, probably with the view of ascertaining whether it had any really curative effect; but, while there was no evidence that it had any therapeutic action, it was observed that it had a remarkable power in raising the temperature of diseased cattle, but rarely had the same influence on healthy ones. Its importance as an aid in the diagnosis of tuberculosis in bovines was quickly recognised and extensively tested. In the first summary of results collected by Eber, and published in the *Centralblatt für Bakteriologie* in 1891, it was shown that of 134 cattle which reacted to tuberculin by manifesting a rise of temperature, and were killed, 85·83 per cent. were tuberculous, and of 113 animals which exhibited no reaction after the injection of tuberculin, and were killed, 89·38 per cent. were not affected with tuberculosis. So that even in

those early days of tuberculin, when experimentalists did not understand it so well as they do now—many of them no doubt making mistakes from not knowing the proper dose to administer—there were 14·18 per cent. of failures in the first instance and 10·62 per cent. in the second. This use of tuberculin has now been widely and most thoroughly tested by the most competent veterinarians in Europe and America, and the reports as to its great value in diagnosis are almost uniformly unanimous. In some of the cases in which it failed to raise the temperature it has been remarked that the disease has been in a very advanced stage, perhaps the last, and that there was not sufficient vitality to sustain reaction. In other instances in which there was a rise of temperature without any gross lesions of tuberculosis to be found after death a more careful examination has led to the detection of localised tubercles in the muscles, bones, brain, or other situation which had at first been overlooked. An American authority who has made a serious study of the subject, and whose latest report appears in the *Journal of Comparative Medicine and Veterinary Archives* for December, states that in his experience of more than 500 cases, of which about 100 had been slaughtered, he could count but one error in diagnosis, this being an old, badly diseased cow, which did not react after a small dose. In all the other cases the results were most satisfactory, every cow that gave a reaction when slaughtered being found to be more or less tuberculous.

Some authorities have so much confidence in this diagnostic test as to declare that with it it is possible to isolate the diseased animals and make certain that those remaining are free from tuberculosis, and they assert that if the cowshed be then disinfected and the herd re-tested after an interval of six months, in order to discover any cases that might, by some exceedingly rare chance, have eluded the first examination, the herd will have been freed from the disorder, and it is only necessary to exclude infected animals in order that the herd shall remain free from it.

To the important question as to what should be done with the cattle that give a reaction, the best authorities are agreed that there should be only one answer—viz., destroy them; and they maintain that all animals which react—ignoring the very few possible exceptions—are tuberculous, though some may only be slightly so, perhaps only a few nodules being found in a limited area, as in the lymph glands. Such cases may not be dangerous so far as the extension of the disease is concerned, for there is very little risk of the bacilli becoming diffused, and it might be objected that the slaughter of such cattle was unnecessary and therefore wasteful; but it would be most difficult, if not altogether impossible, to discover where the tubercles are located while the creatures were alive, and even when they are situated in important organs, which are accessible to examination, they might escape detection. When they are discovered or suspected, and are supposed to be limited to a small area, it is not possible to be certain how long they may remain so, as some exciting cause may induce their rapid development and generalisation throughout the body; it is therefore the safest course to destroy all cattle which react to tuberculin.

No bad results from the injection of a quantity of tuberculin sufficient to answer the purpose of diagnosis in cattle have been noted by the American authority to whom we have already referred; but it has been known almost ever since the introduction of that material that an excessive dose administered to a man suffering from isolated tubercles will probably aid in their diffusion, giving rise to miliary tuberculosis, and so hastening a fatal issue. This writer gives what he believes to be an instance of this unfortunate result. The animal experimented upon was a young Jersey cow, which was known from the marked symptoms presented to have pulmonary tuberculosis. The temperature was 101·6° F. The animal received 0·6 c.c. (about six times the proper quantity for a creature of its size), and in nine hours there was a febrile reaction to 106·2°. The temperature remained above 104° for six days, when the heifer died, and on a necropsy being made acute miliary tuberculosis of the lungs, peritoneum, kidneys, walls of the uterus, and of all the lymph glands connected with the thoracic and abdominal organs was found.

Not only does an excessive dose of tuberculin appear to have a tendency to produce generalised tuberculosis, but instances are recorded which would go to show that in some cases the normal dose, instead of doing harm, may prove beneficial. In these cases the cows gave decided reactions when first tested, clearly indicating the presence of tubercles; but after receiving three or four injections of tuberculin these reactions ceased and the general condition of the animals improved, until at last it was impossible to elicit evidence of tuberculosis either by physical examination or the injection of tuberculin. The results of experiments would also lead to the inference that the agent has a curative action in some cases, especially when the disease is slight. As we have before stated, there can be no doubt whatever that in extirpation of bovine tuberculosis most valuable aid will be obtained by the employment of tuberculin, and the onerous task will be greatly lightened and expedited; and certainly it is high time that some steps were taken to combat the scourge which, for a much longer period than any other cattle contagion, and to a much greater extent, has been ravaging our herds. Already the United States of America have begun to grapple with it, and, knowing the energy with which they enter upon a contest of this kind, where there is much capital at stake, we may soon expect to hear of a decrease in the prevalence of the disease. The States have freed themselves from contagious pleuro-pneumonia; it will be interesting to watch their efforts in suppressing the tuberculosis plague, in which they have taken the lead.

It may be remarked that in Germany, to prevent the heavy loss that would attend the condemnation and withdrawal from the food-supply of the flesh of animals affected with tuberculosis, it has been proposed to cook such flesh in apparatus attached to the public abattoirs, by means of superheated steam, and then allow it to be issued for consumption. Already there is at least one cooking apparatus in operation at Berlin, that of Dr. Rohrbeck, and in all probability there will soon be many more at work. Thorough cooking at a high temperature will, no doubt, render the consumption of such flesh quite safe, and it will prove a boon to the poor, as it will be sold at a low price and require no further preparation—a matter of some moment when fuel is expensive.

THE RUSSIAN MEDICAL CONGRESS IN MEMORY OF PIROGOFF.

THE Fifth Congress of Russian Physicians and Surgeons held in memory of the great Russian surgeon Pirogoff was opened in St. Petersburg on Jan. 8th (New Style). Its conferences were held daily until Jan. 16th. The congress was largely attended, more than 1100 members having been present; of these, 420 were resident in St. Petersburg, and the remainder came from all parts of the country.

The first general meeting was held in the Salle de Noblesse, one of the largest halls in St. Petersburg. Professor Sutugin, the permanent president of the committee of the Pirogoff congresses, read his inaugural address. Professor Lukianof, of Warsaw University, was then elected president of this particular congress. Dr. Doljenkof, of Kursk, was chosen as vice-president, and Dr. Jbankof of Smolensk and Dr. Reich of Kharkof were appointed secretaries. Professor Erisman of Moscow then read an address upon Vegetarianism, in which he came to the following conclusions: (1) that there are no scientific grounds for excluding animal products from food; (2) that pure vegetarianism is actually harmful; and (3) that partial vegetarianism—that is, the avoidance of food that involves the taking of animal life—can claim our sympathy solely upon ethical grounds.

A large amount of work was got through by the various sections, of which there were no less than twenty-eight. The communications read in them numbered in all 156. In that devoted to Ophthalmology Dr. Belliarminof read an account of the "flying companies" of surgeons and *feldschers* who last summer did much good work in treating eye diseases in the country districts of the interior of Russia.

In the section of Syphilography Drs. Manassein and Gratzianof read a paper upon the Control of Prostitution, and pointed out how the spread of syphilis and other venereal diseases may be checked by proper regulation of prostitutes. Dr. Gé of Kazan discussed the question of Professional Secrecy in cases of so-called Secret Disorders. This theme was also the subject of a paper by Dr. Bertenson, read in the section of Legal Medicine. This led to a lively discussion, in which M. Tagantzef, one of the leading Russian authorities upon criminal law, took an active part.

In the section devoted to Cholera a very large number of

communications was read. Professor Erisman, the President of this section, deplored the divisions of opinion which exist among medical authorities upon the etiology and epidemiology of cholera. He looked forward to the time when all will hold one and the same opinion upon these subjects. He praised the good work done by the Russian National Health Society, which had issued and widely circulated a form for the collection of information upon many points connected with cholera. His final words were: "Collect the material and the conclusions will come of themselves." In the other papers read in this section the authors agreed in the opinion that the most frequent cause of the spread of cholera in the recent epidemic was the use of unboiled water taken from polluted or impure sources.

In the section of Gynæcology a lively debate followed Dr. Smolski's paper upon the Treatment of Extra-uterine Gestation. Dr. Phenomenof described the operation of Symphysiotomy.

In the section of Hygiene questions relating to Disinfection were discussed by Dr. Levashef and others. The necessity for diffusing a general knowledge of the laws of hygiene and for insisting upon their importance being recognised was the text of more than one paper both in this and in other sections, and was the subject of some general resolutions which were passed by the final general meeting of the congress. In the section devoted to *Zemskaia Meditzina* (or the relation of the *zemstvos* or local government authorities to medicine) the position of the *feldscher*, or trained medical assistant, was very fully discussed.

In the section of Nerve Diseases many papers of interest were communicated. The President of the section, Dr. Merjeëvski, announced that a subscription had been set on foot among Russian societies interested in psychiatry in order to found some memorial to the late Professor Charcot, and that a telegram had been sent to Madame Charcot informing her of this proposal.

In the section of Surgery an important paper was read by Professor Pavlof upon the new smokeless powder and the new bullets and their power of penetration.

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The next congress in memory of Pirogoff will be held in Kief.

THE DIET OF THE AUSTRALIAN.

THE question whether Australia will become a wine-drinking country, among many others of a more distinctly medical character, was discussed in a lecture by Dr. Murray Gibbes at the opening meeting of the Goulburn Valley Medical Association, Victoria.

The lecturer pointed out that different nations had always, from time immemorial, selected certain beverages as national drinks, and that the fact that the fruit, leaf, or grain supplying the essential principle of the drink was not always indigenous to the national soil was itself a proof that convenience was not the only factor in dictating the choice. Many Continental nations drink, of course, *vin ordinaire*, or the wine of their particular district, and for centuries—until, indeed, free trade and an increasing population prevented it—the Englishman's beer was made from the Englishman's barley. On the other hand, the universal Western vogue of drinking decoctions made from the Eastern shrubs tea and coffee shows that the popularity of a beverage has no geographical limits. The Australians at the present time drink virtually twice as much tea as any European nation, the figures being 4·70 lb. per head per annum in England and 8·68 lb. in Australia; and as they also come third on the list with regard to beer it will be seen that considerable change in the national customs will be required before Australia becomes a nation of wine-drinkers. Dr. Murray Gibbes considered that the character of the drink adopted as national must always be largely dictated by the character of the soil and food, which, in its turn, is dependent upon the climate of the country, and he quoted Sir William Roberts in support of the somewhat paradoxical-sounding theory, the enunciation of which formed the rest of the paper. Sir William Roberts, according to Dr. Murray Gibbes, has said that all beverages, alcoholic or non-alcoholic, conduce to one of two conditions—retardation of the digestive process or excitation of the nervous system. It was the retardation of digestion that Dr. Murray Gibbes considered at length in his lecture, showing that the harsher climes required the stronger foods, while these stronger and more nitrogenous foods—inasmuch as time was necessary for their proper assimilation—called for checks upon a too-rapid and so incomplete digestion; and chief amongst these checks he placed the vegetable acids contained in wine, and the sedative properties of tea and coffee. In proof of this point he cited the examples of the national diets of England, Holland, Germany, and China, and he proposed to account for the opium-habit of the last-named nation as the result of a physiological need for a gastric sedative. Having then ingeniously, if not quite conclusively, demonstrated that a meat-eating nation must swallow a proportional quantity of checks to too rapid a digestion, he continued as follows:—"In Australia meat forms the principal item of every meal, while beer and tea are the beverages. The average quantity of beer drank is 14 gallons per head per annum. South Australia heads the list with 20 gallons, Victoria comes next with 19·36, and New Zealand completes the tale with 9·5. Although we do not consume so much beer as is consumed in England we make up for it in quality ..... for whereas English pale ale contains 40 grains of vegetable acids to the pint Colonial ale contains 191 grains. ..... Colonials do not care for English ale, finding that it does not contain sufficient vegetable acid food-retarders. The Colonials are the greatest tea-drinkers in the world, and the amount consumed is annually increasing." This description of Australian diet pourtrays a state of things which Dr. Murray Gibbes would see altered. He considers it necessary that his brother Colonials should forthwith proceed to adapt their amount of meat-food to their immediate wants, and that they should drink the juice of their splendid vines instead of a pernicious quantity of over-strong beer and thrice-boiled tea.

Public Health and Poor Law.

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REPORTS OF MEDICAL OFFICERS OF HEALTH.

Worcester County Sanitary District.—Mr. Fosbroke, the county medical officer of health, in presenting his report for 1892, first gives a general *résumé* of the sanitary condition of his district, and afterwards a short synopsis of each sanitary district in the county. There are still eleven sanitary authorities in the county who do not publish the reports of their medical officers of health. This is rather disappointing, as it was certainly to be hoped that the circulation of the county medical officers' reports would have stimulated and interested local authorities at least so far as to do this scant justice to their medical officers. The birth-rates in the urban districts of the county varied from 15·6 per 1000 in Great Malvern to 43·3 in Oldbury, while those in the rural districts ranged from 14·1 in Worcester to 55·5 in Winchcombe. The general death-rate of the county was 18·1 per 1000 living; that for the urban districts being 19·8; that for the rural 17·8. The zymotic death-rates were 1·4 in the urban and 0·8 in the rural districts. In connexion with a low case mortality from measles in the borough of Kidderminster Mr. Corbet, the medical officer of health, speaks very highly of the value of notifying this disease, and Mr. Fosbroke has recently persuaded the corporation of Evesham to schedule measles as a notifiable disease. In discussing diphtheria Mr. Fosbroke points to the desirability of notifying all cases of "sore-throat" during an epidemic of that disease. The infantile mortality in the urban district of the county ranges from 94 per 1000 births in Bewdley to 215 in Oldbury, where there is much female employment in factories. Notification

those early days of tuberculin, when experimentalists did not understand it so well as they do now—many of them no doubt making mistakes from not knowing the proper dose to administer—there were 14·18 per cent. of failures in the first instance and 10·62 per cent. in the second. This use of tuberculin has now been widely and most thoroughly tested by the most competent veterinarians in Europe and America, and the reports as to its great value in diagnosis are almost uniformly unanimous. In some of the cases in which it failed to raise the temperature it has been remarked that the disease has been in a very advanced stage, perhaps the last, and that there was not sufficient vitality to sustain reaction. In other instances in which there was a rise of temperature without any gross lesions of tuberculosis to be found after death a more careful examination has led to the detection of localised tubercles in the muscles, bones, brain, or other situation which had at first been overlooked. An American authority who has made a serious study of the subject, and whose latest report appears in the *Journal of Comparative Medicine and Veterinary Archives* for December, states that in his experience of more than 500 cases, of which about 100 had been slaughtered, he could count but one error in diagnosis, this being an old, badly diseased cow, which did not react after a small dose. In all the other cases the results were most satisfactory, every cow that gave a reaction when slaughtered being found to be more or less tuberculous.

Some authorities have so much confidence in this diagnostic test as to declare that with it it is possible to isolate the diseased animals and make certain that those remaining are free from tuberculosis, and they assert that if the cowshed be then disinfected and the herd re-tested after an interval of six months, in order to discover any cases that might, by some exceedingly rare chance, have eluded the first examination, the herd will have been freed from the disorder, and it is only necessary to exclude infected animals in order that the herd shall remain free from it.

To the important question as to what should be done with the cattle that give a reaction, the best authorities are agreed that there should be only one answer—viz., destroy them; and they maintain that all animals which react—ignoring the very few possible exceptions—are tuberculous, though some may only be slightly so, perhaps only a few nodules being found in a limited area, as in the lymph glands. Such cases may not be dangerous so far as the extension of the disease is concerned, for there is very little risk of the bacilli becoming diffused, and it might be objected that the slaughter of such cattle was unnecessary and therefore wasteful; but it would be most difficult, if not altogether impossible, to discover where the tubercles are located while the creatures were alive, and even when they are situated in important organs, which are accessible to examination, they might escape detection. When they are discovered or suspected, and are supposed to be limited to a small area, it is not possible to be certain how long they may remain so, as some exciting cause may induce their rapid development and generalisation throughout the body; it is therefore the safest course to destroy all cattle which react to tuberculin.

No bad results from the injection of a quantity of tuberculin sufficient to answer the purpose of diagnosis in cattle have been noted by the American authority to whom we have already referred; but it has been known almost ever since the introduction of that material that an excessive dose administered to a man suffering from isolated tubercles will probably aid in their diffusion, giving rise to miliary tuberculosis, and so hastening a fatal issue. This writer gives what he believes to be an instance of this unfortunate result. The animal experimented upon was a young Jersey cow, which was known from the marked symptoms presented to have pulmonary tuberculosis. The temperature was 101·6° F. The animal received 0·6 c.c. (about six times the proper quantity for a creature of its size), and in nine hours there was a febrile reaction to 106·2°. The temperature remained above 104° for six days, when the heifer died, and on a necropsy being made acute miliary tuberculosis of the lungs, peritoneum, kidneys, walls of the uterus, and of all the lymph glands connected with the thoracic and abdominal organs was found.

Not only does an excessive dose of tuberculin appear to have a tendency to produce generalised tuberculosis, but instances are recorded which would go to show that in some cases the normal dose, instead of doing harm, may prove beneficial. In these cases the cows gave decided reactions when first tested, clearly indicating the presence of tubercles; but after receiving three or four injections of tuberculin these reactions ceased and the general condition of the animals improved, until at last it was impossible to elicit evidence of tuberculosis either by physical examination or the injection of tuberculin. The results of experiments would also lead to the inference that the agent has a curative action in some cases, especially when the disease is slight. As we have before stated, there can be no doubt whatever that in extirpation of bovine tuberculosis most valuable aid will be obtained by the employment of tuberculin, and the onerous task will be greatly lightened and expedited; and certainly it is high time that some steps were taken to combat the scourge which, for a much longer period than any other cattle contagion, and to a much greater extent, has been ravaging our herds. Already the United States of America have begun to grapple with it, and, knowing the energy with which they enter upon a contest of this kind, where there is much capital at stake, we may soon expect to hear of a decrease in the prevalence of the disease. The States have freed themselves from contagious pleuro-pneumonia; it will be interesting to watch their efforts in suppressing the tuberculosis plague, in which they have taken the lead.

It may be remarked that in Germany, to prevent the heavy loss that would attend the condemnation and withdrawal from the food-supply of the flesh of animals affected with tuberculosis, it has been proposed to cook such flesh in apparatus attached to the public abattoirs, by means of superheated steam, and then allow it to be issued for consumption. Already there is at least one cooking apparatus in operation at Berlin, that of Dr. Rohrbeck, and in all probability there will soon be many more at work. Thorough cooking at a high temperature will, no doubt, render the consumption of such flesh quite safe, and it will prove a boon to the poor, as it will be sold at a low price and require no further preparation—a matter of some moment when fuel is expensive.

THE RUSSIAN MEDICAL CONGRESS IN MEMORY OF PIROGOFF.

THE Fifth Congress of Russian Physicians and Surgeons held in memory of the great Russian surgeon Pirogoff was opened in St. Petersburg on Jan. 8th (New Style). Its conferences were held daily until Jan. 16th. The congress was largely attended, more than 1100 members having been present; of these, 420 were resident in St. Petersburg, and the remainder came from all parts of the country.

The first general meeting was held in the Salle de Noblesse, one of the largest halls in St. Petersburg. Professor Sutugin, the permanent president of the committee of the Pirogoff congresses, read his inaugural address. Professor Lukianof, of Warsaw University, was then elected president of this particular congress. Dr. Doljenkof, of Kursk, was chosen as vice-president, and Dr. Jbankof of Smolensk and Dr. Reich of Kharkof were appointed secretaries. Professor Erisman of Moscow then read an address upon Vegetarianism, in which he came to the following conclusions: (1) that there are no scientific grounds for excluding animal products from food; (2) that pure vegetarianism is actually harmful; and (3) that partial vegetarianism—that is, the avoidance of food that involves the taking of animal life—can claim our sympathy solely upon ethical grounds.

A large amount of work was got through by the various sections, of which there were no less than twenty-eight. The communications read in them numbered in all 156. In that devoted to Ophthalmology Dr. Belliarminof read an account of the "flying companies" of surgeons and *feldschers* who last summer did much good work in treating eye diseases in the country districts of the interior of Russia.

In the section of Syphilography Drs. Manassein and Gratzianof read a paper upon the Control of Prostitution, and pointed out how the spread of syphilis and other venereal diseases may be checked by proper regulation of prostitutes. Dr. Gé of Kazan discussed the question of Professional Secrecy in cases of so-called Secret Disorders. This theme was also the subject of a paper by Dr. Bertenson, read in the section of Legal Medicine. This led to a lively discussion, in which M. Tagantzef, one of the leading Russian authorities upon criminal law, took an active part.

In the section devoted to Cholera a very large number of

communications was read. Professor Erisman, the President of this section, deplored the divisions of opinion which exist among medical authorities upon the etiology and epidemiology of cholera. He looked forward to the time when all will hold one and the same opinion upon these subjects. He praised the good work done by the Russian National Health Society, which had issued and widely circulated a form for the collection of information upon many points connected with cholera. His final words were: "Collect the material and the conclusions will come of themselves." In the other papers read in this section the authors agreed in the opinion that the most frequent cause of the spread of cholera in the recent epidemic was the use of unboiled water taken from polluted or impure sources.

In the section of Gynæcology a lively debate followed Dr. Smolski's paper upon the Treatment of Extra-uterine Gestation. Dr. Phenomenof described the operation of Symphysiotomy.

In the section of Hygiene questions relating to Disinfection were discussed by Dr. Levashef and others. The necessity for diffusing a general knowledge of the laws of hygiene and for insisting upon their importance being recognised was the text of more than one paper both in this and in other sections, and was the subject of some general resolutions which were passed by the final general meeting of the congress. In the section devoted to *Zemskaia Meditzina* (or the relation of the *zemstvos* or local government authorities to medicine) the position of the *feldscher*, or trained medical assistant, was very fully discussed.

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of infectious disease is now general throughout the county, except in the cases of the Stourbridge urban and Tewkesbury rural districts. The sanitary authority of Stourbridge invited Mr. Fosbroke to supply them with some "facts" pointing to the utility of the Notification Act, and although a large number was brought forward and the usual reasons given the sanitary authority had not adopted the Act at the time the report under notice went to press. Mr. Fosbroke showed that, as regards the annual cost of notification, no sanitary authority —with the exception of Kidderminster, where measles is scheduled—paid more than £18. There seems to be in Worcestershire an excellent field for the operation of the Isolation Hospitals Act, 1893, as but few of the authorities are provided with permanent means for isolating patients of all classes. Considerable improvement both as regards drainage and water-supply seems to have taken place in the county during the year, and numerous schemes are under contemplation. As regards river pollution, Mr. Fosbroke was, at the time of writing his report, engaged in investigating the pollution of the Severn, and we presume that an account of this will be included in the next annual report. The Factory and Workshops Act, 1891, does not appear to be properly enforced in the county, and Mr. Fosbroke expresses a hope that more consideration will be given to this important Act during 1894.

Gloucester County Sanitary District.—Although we place this notice with the reports of medical officers of health, it is necessary to point out that it is not the work of a county medical officer, or indeed of any medical officer at all. The County Council of Gloucestershire have not yet appointed a county medical officer of health and the report we are considering is entitled the "Annual Report of the Medical Officers of Health (Reports) Committee." It refers to the year 1892, and consists of less than half-a-dozen small pages of large print. Obviously the numerous and valuable reports of the several medical officers of health in Gloucestershire cannot receive adequate treatment in such a summary, and, in fact, it is to be regretted that the report was ever issued. We would, indeed, venture to suggest that, before the issue of the 1893 report, the committee should obtain and study some of the able summaries of the county medical officers of health which we have from time to time had the pleasure of noticing in the columns of THE LANCET. The report before us refers to a population of 884,552, but no attempt is made, beyond a calculation of the death-rates and birth-rates for the county, to summarise the vital statistics contained in the several reports. The general death-rate of the county was 16·79 per 1000, but no differentiation into urban and rural rates has been made, and no figures with regard to infantile mortality or zymotic diseases are given. The committee are of opinion, as regards hospital accommodation, that with proper ambulances there would be no great difficulty in conveying patients suffering from infectious disease a considerable distance by rail, and they advocate the provision of hospitals near railway stations centrally situated. The views of the committee on the subject of water-supply and drainage are thus set forth. "It is not necessary to enhance the advantage of good water and good drainage. We venture, however, to cite the district of Horfield as an example The medical officer of health reports that the water-supply is excellent, the drainage good, and the district healthy; 41 cases of scarlet fever and 8 of diphtheria occurred, and no deaths from either disease; death-rate, 11·7." Here, then, we have in a lay report the interesting problem of the relations of water-supply and drainage to scarlet fever and diphtheria settled for us, though it is impossible to determine from the report whether it is meant that the absence of any fatal case of diphtheria or scarlet fever was due to the good drainage and water-supply or whether the numbers of each disease are regarded as small. Perhaps it might be pointed out to the committee that Horfield being a suburb of Bristol would be likely to contain an excess of persons past the ages most susceptible to scarlet fever and diphtheria, and that 41 cases of scarlet fever and 8 of diphtheria are not phenomenal numbers for a population less than 7000. We regret that we cannot congratulate the committee upon their report, and we are inclined to ask whether it is necessary—or, at any rate, desirable—that the reports of the medical officers of health should be treated in this inefficient manner.

Aston Manor Urban Sanitary District.—Mr. Henry May, the medical officer of health for this district, is to be congratulated upon the fact that his report for 1893 is the first for that year we have received, and also because he has recently completed twenty-one years of service to his sanitary authority. During this period the population of his district has more than doubled itself. Mr. May refers to the great overcrowding in the public elementary schools in Aston, and expresses satisfaction at the action of the School Board in taking steps to provide additional accommodation. The time required to disinfect articles by means of the old hot air apparatus is so great that the work can only with great difficulty be performed at all; and Mr. May strongly advises the provision of a more modern apparatus. During the last three months of 1893 there were 97 cases of small-pox notified, and some difficulty was experienced in providing isolation accommodation for them. Among 15 cases occurring in unvaccinated persons during the year there were 5 deaths; and among 97 of those vaccinated there was but one. The proportion of scarlet fever cases isolated in hospital during the year was only 38 per cent. of the number notified, and it seems that the small charge made for admission into the hospital acts as a deterrent. The character of the diphtheria prevalent during the year remained, as in 1892, of a mild type, there being but three deaths out of 47 cases. Of typhoid fever there were no less than 127 cases, a number more than double that in 1892; and Mr. May, after making inquiries as to the distribution of the disease, was inclined to suspect the water-supply (which is the same as that in some parts of Birmingham). It seems, however, that in Birmingham the incidence of typhoid fever was less in the districts so supplied than in others, and it was, therefore, inferred that the water was not to blame. We must, however, fully indorse Mr. May's expression of opinion as to the desirability of the bacteriological as well as the chemical examination of all water used for drinking purposes. The mortality from diarrhœa in Aston Manor showed a great increase in the last year, there being 181 deaths, as against 95 in 1892 There was, too, a much heavier incidence of mortality from this disease on persons above five years of age than in the previous year. It is somewhat surprising that the Aston Manor sanitary authority should have proposed to isolate small-pox and scarlet fever on the same site, and the refusal of the Local Government Board to sanction a loan for such a purpose is surely what might have been anticipated. With the evidence before us of Fulham, Oldham, Leicester, and other places, of the disastrous effects of attempting to isolate small-pox and scarlet fever on the same site and at the same time, it is difficult to understand how such a proposal can seriously be made. The general death-rate of Aston Manor for 1892 was 16 7, or 0 9 higher than the average for the decade 1881 to 1891. The infantile mortality was a high one—namely, 187 per 1000 births, as against 146 and 152 for 1891 and 1892, an excess largely, no doubt, to be accounted for by the heavy diarrhœal mortality. The zymotic death-rate was 3·6, compared with 2 6 for 1892.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6536 births and 4156 deaths were registered during the week ending Jan. 27th. The annual rate of mortality in these towns, which had been 28·6 and 23·2 per 1000 in the preceding two weeks, further declined last week to 20·7. In London the rate was 19·8 per 1000, while it averaged 21·4 in the thirty-two provincial towns. The lowest rates in these towns were 14·8 in Derby, 14·9 in Leicester, 16·0 in West Ham, 16 5 in Sunderland, and 16·8 in Portsmouth; the highest rates were 24·8 in Preston, 25·6 in Birmingham, 29·6 in Plymouth, 30·1 in Salford, and 31·1 in Norwich. The 4156 deaths included 480 which were referred to the principal zymotic diseases, against 548 and 497 in the preceding two weeks; of these, 192 resulted from whooping-cough, 80 from diphtheria, 73 from measles, 42 from "fever" (principally enteric), 42 from diarrhœa, 35 from scarlet fever, and 16 from small-pox. These diseases caused the lowest death-rates in Portsmouth, Leicester, Huddersfield, and Halifax, and the highest rates in Newcastle-upon-Tyne, Plymouth, Birkenhead, Bristol, and Burnley. The greatest mortality from measles occurred in Wolverhampton, Birkenhead, and Burnley; from scarlet fever in Derby and Burnley; from whooping-cough in Newcastle-upon-Tyne, Swansea, Bristol, and Plymouth; and

from "fever" in Gateshead. The 80 deaths from diphtheria included 52 in London, 4 in Manchester, 3 in Salford, and 3 in Bristol. Seven fatal cases of small-pox were registered in Birmingham, 3 in Bradford, 2 in Bristol, and 1 each in West Ham, Nottingham, Liverpool, and Halifax, but not one in London or in any other of the thirty-three large towns. There were 78 cases of small-pox under treatment in the Metropolitan Asylum Hospitals and in the Highgate Small-pox Hospital on Saturday last, the 27th ult., against 94. 88, and 82 at the end of the preceding three weeks; 17 new cases were admitted during the week, against 12 and 14 in the preceding two weeks. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital, which had been 2852, 2733, and 2645 at the end of the preceding three weeks, had further declined to 2533 on Saturday last; 235 new cases were admitted during the week, against 224 and 246 in the preceding two weeks. The deaths referred to diseases of the respiratory organs in London, which had been 762 and 547 in the preceding two weeks, further declined to 422 last week, and were 205 below the corrected average. The causes of 100, or 2·4 per cent., of the deaths in the thirty-three towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Leicester, Nottingham, Sunderland, and in four other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Preston, Huddersfield, Halifax, and Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 23·8 and 21·6 per 1000 in the preceding two weeks, further declined to 21·0 during the week ending Jan. 27th, but was slightly above the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 18·1 in Leith and 18·3 in Edinburgh to 22·3 in Dundee and in Glasgow. The 599 deaths in these towns included 51 which were referred to whooping-cough, 9 to diarrhœa, 6 to diphtheria, 5 to small-pox, 3 to scarlet fever, 3 to "fever"; and 2 to measles. In all, 79 deaths resulted from these principal zymotic diseases, against 76 and 59 in the preceding two weeks. These 79 deaths were equal to an annual rate of 2·8 per 1000, which exceeded by 0·4 the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough, which had been 48 and 24 in the preceding two weeks, rose again to 51 last week, of which 28 occurred in Glasgow, 8 in Dundee, and 5 in Edinburgh. The deaths referred to diphtheria, which had been 8 and 13 in the preceding two weeks, declined again to 6 last week, of which 4 occurred in Glasgow and 2 in Edinburgh. Of the 5 fatal cases of small-pox 4 were recorded in Leith and 1 in Edinburgh. The deaths referred to scarlet fever, which had been 5 and 9 in the preceding two weeks, declined again to 3 last week, and included 2 in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 157 and 150 in the preceding two weeks, further declined to 133 last week, and were 35 below the number in the corresponding period of last year. The causes of 33, or nearly 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 42·5 and 30·9 per 1000 in the preceding two weeks, rose again to 32·4 during the week ending Jan. 27th. During the past four weeks of the current quarter the death-rate in the city has averaged 33·2 per 1000, against 24·4 in London and 19·8 in Edinburgh. The 217 deaths registered in Dublin during the week under notice showed an increase of 10 upon the number in the previous week, and included 23 which were referred to the principal zymotic diseases, against 21 and 25 in the preceding two weeks; of these 23 deaths, 11 resulted from whooping-cough, 4 from "fever," 3 from measles, 2 from scarlet fever, 2 from diphtheria, 1 from diarrhœa, and not one from small-pox. These 23 deaths were equal to an annual rate of 3·4 per 1000, the zymotic death-rate during the same period being 2·5 in London and 2·1 in Edinburgh. The fatal cases of whooping-cough, which had increased from 5 to 12 in the preceding three weeks, were 11 last week. The deaths referred to different forms of "fever," which had been 4 and 5 in the preceding two weeks, declined again to 4 last week. The 3 fatal cases of measles corresponded with the number in the preceding week, and the deaths from scarlet fever and diphtheria exceeded those recorded in any recent week. The 217 deaths registered in Dublin last week included 40 of infants under one year of age, and 46 of persons aged upwards of sixty years; the deaths of infants showed a slight increase, while those of elderly persons showed a further decline from recent weekly numbers. Four inquest cases and 4 deaths from violence were registered; and 63, or nearly a third, of the deaths occurred in public institutions. The causes of 15, or nearly 7 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

MOVEMENTS OF THE MEDICAL STAFF.

SURGEON-MAJOR KEOGH and Surgeon-Lieutenant Beyts have embarked in the *Bothnia* for service in India, and Brigade-Surgeon-Lieutenant-Colonel Holmes has arrived in England on completion of an Indian tour. Surgeon-Lieutenant-Colonel Roche, retired pay, has been appointed to the Medical Charge of Glencorse. Surgeon-Major McLaughlin has been posted to Woolwich, and Surgeon-Captain Hickman to Ipswich. Brigade-Surgeon-Lieutenant-Colonel Wright has joined the Southern District, and assumed Charge of the Station Hospital, Gosport. Surgeon-Captain Watson has arrived in England on sick leave from India, and Surgeon-Captain Stuart has returned to Egypt on the termination of leave. The following officers have rejoined their stations from leave of absence: Brigade-Surgeon-Lieutenant-Colonel Keir and Surgeon-Captain Moir, Scottish District; Surgeon-Captains Tyrrel, Stuart, and Windle, Aldershot; and Surgeon-Captain Hall, Woolwich.

INDIA AND THE INDIAN MEDICAL SERVICES.

Surgeon-Colonel Arthur Charles Gaye, A.M.S., and Surgeon-Lieutenant-Colonel Alexander John Willcocks, M.D. (Bengal), are appointed Honorary Surgeons on the Viceroy and Governor-General's Personal Staff. 1st Infantry: Surgeon-Lieutenant G. Bidie, I.M.S., Madras Establishment, Officiating Medical Officer, 4th Infantry, to be Officiating Medical Officer, vice Surgeon-Major F. J. Doyle, officiating as Medical Officer, 3rd Lancers, Hyderabad Contingent. 2nd Infantry: Surgeon-Captain C. H. L. Falk, I.M.S., Madras Establishment, Medical Officer, 4th Infantry, and Officiating Medical Officer, 2nd Infantry, to be Medical Officer. 4th Infantry: Surgeon-Major C. L. Swaine, M.D., Medical Officer, 2nd Infantry, and Officiating Sanitary Commissioner, Hyderabad Assigned Districts, to be Medical Officer. Surgeon-Lieutenant-Colonel R. G. Thomsett and Surgeon-Captain A. O. Fitzgerald are posted respectively to the Station Hospital, Poonamalli and to the Madras District. Brigade-Surgeon-Lieutenant-Colonel W. S. M. Price, A.M.S., assumes the temporary Administrative Medical Charge of the Allahabad District, vice Surgeon-Colonel W. T. Martin, M.D., A.M.S. Surgeon-Major R. Manser, I.M.S., First Physician, J. J. Hospital, and Professor of Medicine, &c., Grant Medical College, has resumed the duties of his office on return from leave. Surgeon-Captain J. Crimmin, V.C., resumes charge of his substantive appointment of Civil Surgeon, Ratnagiri. The services of the undermentioned officers of the Indian Medical Service (Bengal), which were placed temporarily at the disposal of the Chief Commissioner of Burmah, are placed permanently at his disposal: Surgeon-Captain A. R. P. Russell and Surgeon-Captain J. H. Sellick. Surgeon-Major T. H. Sweeny, Civil Surgeon, on return from furlough, to the Kheri District. Surgeon-Major W. Conry, M.B., 13th Bengal Lancers, is granted extension of leave on medical certificate for six months.

NAVAL MEDICAL SERVICE.

The following appointments are announced: Fleet-Surgeons: R. W. Biddulph, B.A., M.B., to the *Vernon*, and Charles C. Godding, to the *Centurion*. Staff-Surgeons: A. Kidd, to the *Leander*; Edward Ferguson, to the *Victor Emmanuel*; and Alfred Patterson, to the *Warspite*. Surgeons: Henry W. G. Green and Edward B. Pinkthorn, to the *Ramillies*, additional, for disposal; H. Harries and E. A. Shaw, B.A., M.B., to the *Centurion*; Basil R. Clarke, to the *Melita*; George Edmunds and Ernest J. Finch, to the *Victory*; Arthur S. Nance, to the Hong-Kong Hospital;

Edward H. Meaden, to the *Alacrity;* Alfred T. Rimell, to the Hong-Kong Hospital; R. J. Fyffe, to the *Alexander*, lent; W. R. N. Young, to the *Caroline;* and George M'Shane, to the *Linnet*.

VOLUNTEER MEDICAL CORPS.

Rifle: 1st Bucks: Brigade-Surgeon-Lieutenant-Colonel W. J. Shone resigns his commission as Surgeon-Lieutenant-Colonel.—1st Volunteer Battalion, the Durham Light Infantry: Surgeon-Captain, J. Hedley resigns his commission.

THE SOLDIER'S SORE-FOOT.

Surgeon-Captain W. C. Beevor, Scots Guards, recently delivered a lecture at the Royal United Service Institution, Major-General Lord Methuen, C.B., in the chair, on this frequent source of impediment and difficulty in the marching power of an army. The lecturer recounted the results of his observations and experience derived from the 2nd Battalion, Scots Guards, and from the studies he had made of the subject in connexion with the fighting and marching powers of foreign armies. After describing the different types of this affection most commonly encountered, in one of which the skin is abraded and a raw, tender, and sometimes bleeding surface is exposed, and soaked-looking patches, accompanied by more or less acrid discharges and confined perspiration, are present, and in the other where ordinary blisters are the less acute result of friction and injury, the lecturer discussed their respective causes and treatment. He condemned the present fashion generally adopted by the infantry soldier of folding a thick and voluminous trouser within a non-porous leather legging as being productive of swelling, heat, and excessive perspiration of the feet, and advocated that soldiers should be allowed to wear time-expired or part-worn trousers, cut short, and hanging over the upper part of the leggings, so as to allow of ventilation and evaporation, and prevent all obstruction to the circulation. There were sound objections to the present regulation boot, which was not constructed on a scientific principle; the best covering for a foot which has to perform severe work is that which covers it the least. In this and other respects the shoe has obvious advantages, and if combined with the use of spat and legging its disadvantages in regard to its not protecting against the introduction of dust and foreign bodies and want of support to the ankle would be obviated. Regarding socks the lecturer advocated the German method of supplying the soldier with cotton as well as woollen ones, and laid particular stress upon the fact that they should fit accurately as well as upon the importance of cleanliness as a preventive of sore-foot. For the first variety of foot-soreness the application of a thick layer of zinc ointment and the use of linen as a covering are found to answer excellently in practice. As regards the treatment of the various kinds of blisters forming the other variety of foot-soreness, it is recommended that the puncturing instrument should be inserted in the sound skin about one-eighth of an inch beyond the edge of the blister, passed into it horizontally, and then slightly raised to allow the fluid to run out, after which the skin of the blister is to be carefully flattened down and protected by lint or cotton-wool, fixed with the aid of strong strapping. The use of zinc ointment applied to the feet before and after a march is spoken of as being highly beneficial.

ARMY MEDICAL SCHOOL, NETLEY.

The sixty-seventh session of the Army Medical School, Netley, was brought to a close on Jan. 31st, with a presentation of prizes to the successful students by Sir Alfred Lyall, K.C.B. Among those present were Surgeon-Major-General Broke Smith, Professor J. Lane Notter, M.D., Sir Joseph Fayrer, K.C.S.I., and Sir Thomas Longmore, C.B. The successful candidates at the recent examination of Surgeons on probation were announced as follows (the numbers represent the combined marks obtained at the London and Netley examinations):—*British Medical Service:* H. V. Prynne, 4736; A. E. Master, 4635; G. Dansey Browning, 4327; E. S. Clark, 4073; K. B. Barnett, 4051; M. Boyle, 4015; K. M. Cameron, 3980; C. M. Fleury, 3717; A. E. Fox, 3657; S. F. Green, 3628; and W. Tibbits, 3485.—*Indian Medical Service:* G. Lamb, 5634; H. Burden, 5188; B. H. Lenmann, 4802, J. Fisher, 4578; E. S. Peck, 4479; C. H. Evans, 4419; H. Bennet, 4385; A. Harriss, 4318; A. E. Berry, 4304; E. C. M'Leod, 4282; C. Thomson, 4045; and H. Fraser, 4032. The Herbert prize of £20, with the Martin Memorial Gold Medal, the Parkes Memorial Bronze Medal, the Montefiore second prize, and a prize in Pathology presented by Professor A. E. Wright, M.D., were gained by Mr. G. Lamb; the Montefiore Medal and prize of 20 guineas, De Chaumont Prize in Hygiene, and prize in Clinical Medicine, presented by Surgeon-General W. C. Maclean, C.B., going to Mr. H. Burden; and Mr. A. E. Berry obtained the prize in Pathology, presented by Professor A. E. Wright, being of equal merit with Mr. Lamb.

THE VICTORIA CROSS AND MEDICAL SERVICES IN BURMA.

The *Pioneer Mail*, referring to the subject of the Victoria Cross, which has just been given to Surgeon-Major Lloyd, says that it was well earned, and that every one acquainted with the details of the fighting about Sima, in Upper Burma, will be delighted to hear that the decoration has been bestowed. No more trying position could have been imagined than that of Surgeon-Major Lloyd when he gallantly rescued his military European companion, Captain Morton. This is the third Victoria Cross won by the medical services in Burma since its annexation, the two former recipients being Surgeon-Captain Le Quesne of the Army Medical Staff, and Surgeon-Captain Crimmin, of the Indian Medical Service.

DEATH IN THE SERVICES.

Deputy-Inspector-General A. Fisher of the Royal Navy (retired), died recently at Newcastle-on-Tyne. He served in the *Bellerophon* in the Black Sea in 1854 to 1855, and received the Crimean and Turkish Medal with the Sebastopol Clasp.

The *Broad Arrow* states that Surgeon-Major-General W. R. Rice, now the head of the Indian Medical Service, is to be the sanitary adviser to the Government of India at Simla, with a seat on the Council and a large increase of salary. This arrangement will necessitate a successor to Surgeon-Major-General Rice, who will, of course, be selected from the Indian branch of the Medical Service.

The Bangalore District, which has always been administered by a Surgeon-Colonel of the Army Medical Staff, will pass into the hands of an Indian medical officer of similar rank, while Secunderabad will come under the control of the Army Medical Staff.

H.M.S. *Euphrates* sailed from Bombay on the 20th ult. with twenty patients for Netley.

Correspondence.

"Audi alteram partem."

"CHLOROFORM IN NASAL GROWTHS."

To the Editors of THE LANCET.

SIRS,—The subject of anæsthesia for the removal of adenoid growths is one of great importance because of the frequency of the operation and the undoubted danger that attends its performance if the anæsthetic be unsuitable or clumsily manipulated. With all deference to the authorities who have lately written upon this matter, I venture to express my belief that none of them have exactly taken up the right attitude with regard to this operation. Speaking from considerable experience I may boldly assert that these cases are very varied in their nature and extent, and they differ widely according to the age of the patient, the toughness of the growths, their extent, and concomitant affections of the nose and throat which need synchronous treatment. To attempt, therefore, to lay down rules that any one anæsthetic agent is universally applicable for these cases is, in my judgment, unwise. To take the two extremes: a child with soft and scanty adenoids, which can be readily removed by scraping with the finger-nail and Gottstein's knife, may be anæsthetised by nitrous oxide gas alone after the fashion well described by Dr. Holloway as universally adopted at the London Throat Hospital; but a young and vigorous adult with masses of tough tissue the size of grapes or hazel-nuts in the naso-pharynx will certainly, for the majority of operators, demand a longer period of anæsthesia than it is well to attempt to procure by nitrous oxide gas. To do these cases with the care and absolute thoroughness which surgical operations of all kinds demand takes from ten to fifteen minutes, using such instruments as the ring knife or the post-nasal forceps. I do not deny that a great deal can be done in a much shorter time than this, and expert operators in a few moments will tear away considerable masses of tissue, the removal of which gives relief and improvement. I feel sure, however, speaking in no critical spirit, that the

symptoms sooner or later recur in many cases thus dealt with. Anyone who has had experience of tonsillotomy knows that richly vascular soft lymphoid tonsils not infrequently grow again to a significant size, even after good removal. It is likely, therefore, that the adenoid tissue of the naso-pharynx, unless well extirpated, is likely to bud afresh, and I can assert that this sequence, unless much care be taken, is very likely to take place, and in private cases that can be well and long watched the tendency to recurrence of the growths must impress a candid observer. Again, in a considerable number of cases of marked adenoid growths the tonsils need removal and the mucous membrane over the spongy bones is frequently hypertrophic and much engorged, needing the application of chemical caustics or the galvano-cautery. In such instances a more prolonged period of anæsthesia is needful for full surgical treatment. In delicate children the sudden gush of blood, combined with deep chloroform narcosis, has more than once proved fatal from syncope, and for that reason I think ether, or one of its mixtures, preceded by nitrous oxide gas, the safer agent to employ. The right amount of anæsthesia to induce needs much experience, but laryngeal reflex should never be entirely abolished, and the greatest care should be taken to prevent the gushing of blood, mucus, and fragments of growth into the air passages. There are three positions which may be employed in these operations. The head may be bent forward over the knees, the head may be thrown far backwards in extension over the end of the table, or the patient may be turned upon the side, with the head hanging slightly over the edge of the table. The latter position is the one I now adopt, having tried the other two. The blood runs into the dependent cheek and can thence be easily sponged away, and there is never the least anxiety on the score of asphyxia. The dangerous position is the sitting one, unless the surgeon be assisted by a very dexterous sponger, when it is comparatively safe. Some young and courageous adults may be operated upon under cocaine, but the process is excessively disagreeable, and the majority are unable to endure an operation of thoroughness and certainty. In conclusion, I think the key of the question of the right method of inducing anæsthesia will be found in the careful consideration of the aspects of each case, the surgeon informing the anæsthetist what he is going to do and the probable time he will take. The latter lays his plans accordingly and aims at maintaining full, not deep, narcosis during the performance of the operation only. Should the surgeon need to prolong the operation beyond the time he expected the anæsthetist may readily give some chloroform through a nasal or mouth tube, and this, in my humble judgment, is the only way in which chloroform is to be employed in these cases. In the vast majority of cases gas and ether will be found safe and all-sufficient. If the patient be allowed to take half a dozen respirations before the operation is commenced it will lessen the amount of blood actually lost.

I am, Sirs, yours truly,

Jan. 29th, 1894. MARMADUKE SHEILD.

To the Editors of THE LANCET.

SIRS,—I have the honour to reply categorically and in sequence to the questions of various correspondents in the current issue of THE LANCET. To commence with Mr. Wilkin, it is true that my letter in your issue of Jan. 6th was written not "practically" but actually advocating "the discontinuance of the use of chloroform as an anæsthetic," not in "nasal surgery," but for the removal of adenoid growths from the naso-pharynx. I very plainly indicated that the gentlemen named by me "used this anæsthetic (nitrous oxide gas) for all their hospital as well as their private cases." Indeed, very few operations on children are done in the hospital without an anæsthetic, which is, as I may remind Mr. Redman, another of your correspondents, necessary, not only on account of pain, but also because it obviates a not inappreciable amount of shock and terror, harmful results which it is as important to consider in the case of the poor as of the well-to-do. In spite of Mr. Wilkin's belief that chloroform "is an exceedingly safe anæsthetic for children," the fact remains that already there are seven or eight deaths recorded in a very short time, and in relation to a comparatively small proportion of examples.

A late communication in your columns shows that the chance of seeing "the stump of a recently amputated tonsil spurting blood" is exceedingly rare, and if it did occur there would be no difficulty in allowing the patient to recover consciousness, and on cessation of the hæmorrhage making a second administration of nitrous oxide gas for the removal of the adenoids. In any case the accident would be far less serious under the short narcosis of gas than that of either chloroform or ether. As to the suggestion that there is "not sufficient time given by this anæsthetic (gas) for the thorough performance of the operation," I have to say that ordinarily in private practice, and certainly on very frequent occasions at the hospital, I have seen the surgeons offer those in attendance an opportunity of exploring the naso-pharynx on completion of the operation and before the patient has recovered consciousness. Indeed, on more than one occasion a pupil has been allowed to examine the vault during the period of anæsthesia both before and after the operation. To finish with Mr. Wilkin, reference to my letter will show that I am under no "impression that this operation is in danger of being lost," although I do know of several cases where the fear of chloroform has, on the part of the parents, militated against the advice of the surgeon, and continuance of these misadventures will undoubtedly bring into disrepute an operation the merits of which there is, with present knowledge, no need to emphasise. I only claimed that the procedure should be made as safe as possible, and it will be difficult to convince, at least, the lay public that the existence of adenoids is of such vital importance as to justify the administration of an anæsthetic which is attended with a serious risk.

Your next correspondent, Mr. MacGregor, convinced by "an experience of some hundreds of cases" that there is a real danger, is "anxious to find an efficient substitute." I assure him he will find it in nitrous oxide gas. I have already answered his objections both as to time and thoroughness, and I can further assure him that the operation of removing a couple of hypertrophied tonsils and effectually scraping out the naso-pharynx under gas in from thirty to sixty seconds is done very frequently every day at the Central London Throat and Ear Hospital, as many on-lookers can testify, and not by one surgeon, but by each member of the staff. Of this, Mr. MacGregor can convince himself if he will visit the institution, where he will receive a very hearty welcome.

In conclusion, with regard to Mr. Redman, a not inconsiderable experience prevents my agreeing with him that a 10 per cent. solution of cocaine would render the operation in question "practically a painless one." Nothing need be said as to his rules for guidance except that we never do, at the hospital in question, "anæsthetise without securely 'propping' open the mouth," this being effected by a self-adjusting instrument recently figured in your columns.

I am, Sirs, yours faithfully,

W. G. HOLLOWAY, M.D. Cantab.

Bentinck-street, W., January 20th, 1894.

To the Editors of THE LANCET.

SIRS,—As one who has had now some twelve years' experience in operating on the nose and throat, I would ask to be allowed to add my quota to the discussion now going on in the columns of THE LANCET *re* the question as to the most desirable anæsthetic in these cases. My experience teaches me that the most desirable anæsthetic in a large majority of the minor operations on the throat, post-nasal space, and nose, is no anæsthetic at all. It can only be in a very small percentage of cases that a general anæsthetic is necessary, and the question is strictly limited to one necessity. A 4 per cent. solution of cocaine will produce all the anæsthesia required in ordinary cases and with an ordinarily skilled operator. If patients are to be allowed to demand an anæsthetic for every trivial operation we shall soon hear of shaving and hair-cutting being done under "gas" as the latest triumph of the development of the barber-surgeon's art.

It amounts to an abuse of a valuable agent for the relief of human suffering when administered (not without serious risk to life) for every little surgical procedure that involves not pain but slight discomfort, and should be discouraged by the profession as a whole.—I am, Sirs, yours faithfully,

MAYO COLLIER, M.S. Lond., F.R.C.S. Eng.

Harley-street, W., Jan. 22nd, 1894.

"AN UNNECESSARY EXHUMATION."

To the Editors of THE LANCET.

SIRS,—The following is a statement of the case of Cecil Lawrence Petre, the subject of the "unnecessary exhumation" mentioned in an annotation in THE LANCET of Jan. 20th:—I was called at 8 A.M., Jan. 1st, 1894, to see a

child of Mr. Lawrence Petre, eleven months old, whom I had previously attended for severe convulsions due to teething. I arrived as soon as possible, and found the child *in articulo mortis*. He had been in severe convulsions for about an hour or more. He was deeply cyanosed, the limbs were perfectly flaccid, there was no pulse, respiration or heart beat, the pupils were insensitive, and the corneal reflex was absent. The only sign of life was the active cause of his condition—viz., remaining spasm of the diaphragm. Artificial respiration, with special expiratory effort, improved his condition slightly, but spasm recurring, I lanced the gums, which were blue and swollen, and repeated a treatment which I previously successfully carried out on a similar occasion with the same child—that is, I injected hypodermically $\frac{1}{15}$ gr. of morphia. The child shortly afterwards recovered somewhat, and spasm disappeared. As a precautionary measure, hearing the bowels had not acted properly for some time previously, I gave half a drop of croton oil on the tongue and put the child to bed in warm blankets, &c. There was never any reaction. Shortly afterwards I was recalled to the room, and found the child again convulsed, spasm returned, and œdema of the larynx set in. I had frequent occasion to restore the child by artificial respiration, and, seeing by the pupils that the effect of the morphia had been very evanescent, I tried to get expiratory effort by inducing vomiting with $\frac{1}{15}$ gr. of apomorphia. To aid the circulation I gave injections of ether and brandy. There was no reaction, and, the trachea becoming obstructed after trying the effect of withdrawing the tongue by means of a thread passed through it, I finally said that tracheotomy was the only chance, and successfully performed it. I cleared the trachea and both bronchi of mucus by suction with a silver catheter and then inserted the tubes. The child now partially recovered, breathing became easy, cyanosis disappeared, and the surface of the body got warm. Subsequently, notwithstanding every effort to support and restore life, and after spending hours nursing the child myself, to the great detriment of some of my other patients, the child died asphyxiated at about 5 A.M. on Jan. 2nd. The results of my labours were an exhumation and post-mortem examination and subsequent inquest at which I was, as you know, entirely exonerated from all blame in the case. I should desire the medical profession generally to consider the importance of the possible frequent occurrence of such a state of things. A man has apparently only to express dissatisfaction to have an inquest hurled at the head of his medical attendant because a child cannot be saved. Extreme cases must be left unaided if such a state of things is to continue possible; and, as in my case, the medical attendant is exposed to great risk, annoyance, and expense, with barely sufficient time allowed him to procure adequate counsel. In this case the proceedings were kept from me till twenty hours before the preliminary inquiry, and I had to hunt London at past midnight for forensic advice.—I am, Sirs, yours truly,

Jan. 29th, 1894. E. CLOETE SMITH.

PROPOSAL FOR AMENDING THE SYSTEM OF MEDICAL CLUBS AND ASSOCIATIONS.

To the Editors of THE LANCET.

SIRS,—Whilst the subject of clubs, medical aid associations, and dispensaries is attracting so much attention, may I lay before the profession for criticism a suggestion which I believe to be original? The main faults of the present system appear to be an inadequate remuneration, the contract system, and an induced tendency on the part of the practitioner to hurry over his work. My suggestion is that, instead of paying the practitioner for what must necessarily be an uncertain amount of work, the members should combine, as now, and appoint a committee and treasurer, who shall receive their subscriptions. So far this does not differ from the present custom. Now, instead of contracting with one medical man, as heretofore, to do all the work they should allow their members to call in any practitioner whom they choose, who shall agree to see them for his usual visiting or surgery fee. The practitioner will then send in his bill, stating the number of visits or attendances of "John Smith," to the committee, who shall agree to pay him quarterly for actual work done. To avoid the inconveniences of dispensing, arrangements could be made to pay the druggist in the same way. I would suggest that in no case whatsoever should the consulting fee include medicine. Patients of all descriptions would then be brought to realise that it is for the advice they pay the medical man, and not for the drugs.

For the above scheme I would claim the following advantages: that if the practitioner is adequately remunerated under the present system he would not suffer under the new; should a time of epidemics arise, as at present, his pay would increase in proportion, and as each individual stands to him in the relation of a private patient his interest would be more keen and his attention less divided, more especially as the patient could at any time during his illness change his medical adviser. On the other hand, when there was but little illness the committee could lay by a small reserve fund for a busy time without being reproached on the ground that they are making money out of their medical man. Again, the patient not being able to say at present, "Well, I have paid the medical man why should I not have him?" he would be less likely to consult the practitioner for the most trivial complaints, and such an instance as a man sending for the medical attendant at midnight because his tooth ached would be of less frequent occurrence, as the committee would soon interfere. Again, minor surgical cases requiring, as they do, expensive dressings could be met by a slightly increased fee on due representation to the committee.

I am, Sirs, yours faithfully,

Weston-super-Mare, Jan. 30th, 1894. MURTAUGH HOUGHTON.

*** Our correspondent's letter is interesting. The fear is that the members of clubs and associations will not see things in the same light. Undoubtedly the great desideratum is to approximate club practice to private practice in the two respects of better pay for the practitioner and the right of choice for the patient. But the club concedes its right of individual choice for the very purpose of obtaining attendance on lower terms by having a medical man of its own, more or less under its own control, with, however, very questionable results for the dignity of the profession or the advantage of the patients.—ED. L.

"OBSTETRIC AND GYNÆCOLOGICAL NURSING."

To the Editors of THE LANCET.

SIRS,—I do not see anything in Dr. More Madden's letter in THE LANCET of the 27th inst. that is at variance with the passages he quotes from the notice in your issue of Jan. 20th. The review did not say that there is no information as regards the employment of antiseptics in midwifery, but that in teaching persons who have usually had a very limited general education more *prominence* should be given to the subject, and more especially that plain directions concerning antiseptics should have appeared in the chapter on the management of natural labour, in which there is no mention whatever of antiseptics. Again, in teaching the class of persons for whom the book is more especially intended I think directions should be particular rather than general; for instance, instead of telling the nurse to have the antiseptic solution ready (as on p. 67), mention should be made of some particular solution, such as 1 in 1000 corrosive sublimate lotion, or whatever antiseptic solution the author considers best. The other passage of the notice to which Dr. More Madden refers—"It is of little avail for the medical man to employ elaborate antiseptic measures when a nurse, whose hands are anything but aseptic, has already examined the patient"—had reference to the account of the special duties of the monthly nurse. From this account it clearly appears that part of the nurse's duty is to examine the patient before sending for the medical attendant. It seems to me to be quite wrong for a nurse to do so, unless specially directed by the medical man. The passage Dr. More Madden quotes from his book, p. 141—"The nurse's primary duty in every puerperal case is the removal of all septic matter or possible sources of infection, not only from the external parts and vaginal orifice by frequent sponging or washing out with some antiseptic solution, but also by the thorough cleansing out of the uterus and vagina when necessary by hot water or antiseptic douching with the irrigator, subject to the approval of the doctor, if there be one in attendance"—evidently points to circumstances possibly arising in which a nurse would be right to undertake washing out the uterus, even without the direction of a medical man. I should say washing out the uterus should never be left to a nurse. I do not think either that "washing by use of nailbrush, hot water, and carbolic soap," though good so far as it goes, produces the nearest approach to

perfect cleanliness (asepsis)of the hands, unless it be followed by soaking them in corrosive sublimate solution.

I am, Sirs, yours faithfully,

Jan. 29th, 1894. THE REVIEWER.

"DRUGGISTS' PRESCRIBING."

To the Editors of THE LANCET.

SIRS,—"F.R.C.S," in THE LANCET of Jan. 27th, has drawn attention to the fact that druggists are in the habit of prescribing as well as dispensing for people who consult them. This, I may say, is no new discovery, as it is a practice of long standing and of everyday occurrence, not only in London, but all over the country. Many people never think of going to a medical man before consulting a druggist, and it is only when the powers of the latter fail that the former is applied to. Perhaps "F.R.C.S." would be surprised to hear that a druggist's assistant's best recommendation, in many instances, is his knowledge of prescribing This I know from practical experience. The druggist's *forte* lies in the branch of medicine known as "minor ailments," whatever that may mean. It generally includes every disease and injury which human flesh is heir to—of course, surgical operations excluded. The complaints common to infants and children, such as "hives," diarrhœa, vomiting, &c., are recognised sources of income to the enterprising druggist, and many mothers impose every confidence in the family druggist. In some cases I have known people to prefer the druggist's opinion and prescribing to that of the medical man. "F.R.C.S." quotes a case of a druggist prescribing for some disease of the lip without benefit, but how innumerable are such cases? Only last week a woman consulted me about her boy, who had been treated by a druggist for some skin disease which the druggist positively assured the mother was not ringworm and that there was no danger of it spreading. It was a typical case of ringworm, and had spread to the neck. I could multiply many cases of such, but I think the profession is well aware—or, if not, ought to be—of such practices on the part of druggists. There is no law to prevent the druggist from doing this, if he chooses: and he considers it a perfectly legitimate field to work in. He argues that he is as much entitled to prescribe for his customers as the medical man is in dispensing for his patients, and as long as the medical man continues to dispense his own prescriptions so long will the druggist continue to prescribe for all and sundry who have confidence in his skill to benefit them. *En passant*, medical men who dispense in most cases are, pharmaceutically speaking, models of inelegant and inexact manipulation.

I am, Sirs, yours truly,

London, Jan. 27th, 1894. W. M.

THE SCOTCH FORM OF OATH.

To the Editors of THE LANCET.

SIRS,—I have received letters from the two gentlemen who were the subjects, one of Mr. Justice Day's sarcastic remarks at the last Lancaster Assizes, the other of the very uncalled-for remark of Mr. Coroner Brown at a recent inquest at Keighley, Yorkshire. Each gentleman assures me that he will not be deterred from taking the oath in the same way in future. It is only just to the judges of the higher courts to point out that they have made no difficulties about this form of oath. Within the last twelve months I have been sworn before four of them—Justices Wills, Charles, Lawrence, and Day—without the least difficulty. So also with the local stipendiary magistrate and the city coroner no objection is made to this form of oath, and I have no doubt that the experience of other medical witnesses is similar.

That some gentlemen learned in the law, including a right honourable recorder, a county court judge, a metropolitan stipendiary magistrate, and several legal coroners, have refused this form of oath is true. It would be easy to give the reason, but it would occupy too much of your valuable space. Let me add for the information of those readers of THE LANCET who have not yet seen them the following notes. 1. The Oaths Act (51 & 52 Vict., cap. 46) can be obtained from Messrs. Eyre and Spottiswoode, East Harding-street, for one halfpenny, or by post for one penny. 2. Before taking the oath the witness should say, "I wish to swear with uplifted hand." Even holding it up will suffice in the higher courts, the judge's clerk knowing very well now what it means. 3. Any demand to take or kiss the book or any question should be met with the calm reply, "I desire to swear with uplifted hand, in accordance with Section 5 of the Oaths Act, 1888." Everyone who administers an oath ought to have this at his fingers' ends, and if he has it not the blame must rest with the presiding officer of the court.

The Scotch form of oath does not make much progress here, but it seems to me that medical witnesses handle the book with increased repugnance, and look very carefully to find a clean page (not always an easy matter) before kissing it. I live in hope, therefore, that before many years are passed the Scotch form of oath will be as general as it is now rare. I have spent much time in trying to find out when kissing the book first commenced, but without success. It is probable that it was first introduced in the latter part of the sixteenth century. Can any of your readers aid me?

I am, Sirs, yours truly,

Liverpool, Jan. 30th, 1894. CONJURATOR.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Medical Officer of Health.

AT the last meeting of the health committee, on the 25th inst., it was resolved to recommend that Dr. Edward William Hope, the port sanitary medical officer, be appointed medical officer of health on the retirement of Dr. J. Stopford Taylor in April next. The remuneration proposed is £900 a year, in addition to the £100 per annum which he now receives as port sanitary medical officer. Dr. Hope graduated at Edinburgh as Bachelor of Medicine in 1878, obtained the Licence of the Royal College of Physicians of London in 1879, graduating in 1882 as Doctor of Medicine, and Doctor of Science in the Department of Public Health in 1887. For several years subsequently Dr. Hope held the appointments of house physician to the Bristol General Hospital, the Wolverhampton General Hospital, and the Liverpool Fever Hospital, while since the period covered by these appointments his whole time and individual attention have been devoted to public health. In 1883 he was appointed assistant medical officer of the city of Liverpool, which, as is well known, had then a population considerably exceeding half a million, being the most populous sanitary district in the kingdom. The routine sanitary operations of such a district are, as might be expected, of a very extensive kind, affording exceptional opportunities for acquiring varied and valuable experience. From 1884 to 1888 Dr. Hope was physician to the City Infectious Hospital, when increasing duties, owing to the city council placing the entire sanitary department under his control, induced him to resign the appointment. The hospital committee passed the following resolution, which was approved by the city council, on Sept. 1st, 1888: "That in accepting Dr. Hope's resignation as visiting physician to the City Hospital, Park Hill, the committee desire to record their satisfaction at the great skill he has displayed in carrying out his duties." In March, 1886, the council of the Liverpool University College elected Dr. Hope to the lectureship on Public Health and Hygiene, and in 1887 he was appointed examiner in these subjects to the Victoria University. He has also been President of the North-Western Branch and Vice-President of the Society of Medical Officers of Health. His contributions to the literature of public health have been numerous, comprising papers on typhus fever in the city of Liverpool, on its latent period, infectiousness, and mortality, based on 1100 cases, and on localised outbreaks of and means adopted to prevent it. He has also written extensively on infantile diarrhœa (one of these papers being noticed in THE LANCET of Aug. 29th, 1885), on typhoid fever, small-pox, meat-supply, and the inspection of meat. Dr. Hope has conclusively demonstrated the influence of vaccination in modifying the effects of small-pox in Liverpool and the importance of preventive measures. The recommendation of the health committee has to be confirmed by the city council and the Local Government Board. There is, however, every reason to believe that Dr. Hope's appointment to this important post will be sanctioned by these bodies, since it may be confidently asserted that no other candidate could possess the same local, general, and special qualifications for the office.

The late Dr. Ewing Whittle.

The death of Dr. Ewing Whittle at the ripe age of eighty years is an additional proof, if any were wanting, that hard

work in the medical profession carried on for many years is not inconsistent with longevity. For many years Dr. Whittle had a large general practice, and was honorary surgeon to the Liverpool South Dispensary. In 1862 he was appointed Lecturer on Medical Jurisprudence to the then Royal Infirmary School of Medicine, which office he retained after it had become the Medical Faculty of the Liverpool University College, and until some years ago when advancing years and declining health induced him to resign. Dr. Whittle was much respected by his professional brethren. He was twice married, his second wife having predeceased him very recently. His son, Dr. Glynn Whittle, is a well-known member of the profession here, and holds several important medical appointments.

Resident Medical Officers' Certificates and the Police-court.

Respecting the difference between the stipendiary magistrate and the resident medical officer of a local hospital and one of the local dispensaries the following explanation may be given: For many years past it has been the practice for the police officers in charge of cases of assault to ask the medical attendant to give a certificate of the state of the injured person to produce to the prosecuting solicitor, or person acting for him, or to the magistrate. In such a city as this, with only one police-court, the work is exceedingly heavy, and the task of arranging the cases according as they are for first hearing, or have been remanded, or are cases for summary jurisdiction or for committal to the assizes or sessions, is no light or easy one. Hence the necessity for these certificates, which are willingly given by practitioners engaged in private practice whose time is valuable. In a case where the injured person was taken to the East Dispensary the medical officer declined to give a certificate on the ground that a rule of the dispensaries committee passed in 1891 prevented him from doing so. This was misrepresented to the stipendiary, and a case having occurred a few days previously in which one of the resident medical officers of the Royal Infirmary had also refused to give a certificate, led the magistrate to make the strong remarks alluded to in THE LANCET a few weeks ago. In this city medical witnesses are paid half a guinea for attending and giving evidence at the police-court in cases with which the magistrate deals summarily, but this is per case, not per day, as in cases committed for trial; hence the certificate asked for is as great a boon to the medical attendant as to the magistrate and police. The dispensary rule alluded to should be modified, and every effort should be made to continue the cordial feeling which has always existed between the members of the medical profession on the one hand and the present and late stipendiary magistrates on the other; any disturbance of this is to be deprecated.

Jan. 30th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Carbolic Acid Poisoning.

WE have now in Newcastle entered upon a series of poisoning by carbolic acid. In addition to the two cases I recorded last week as being almost simultaneous I have to note another. In this case it was a married woman aged forty-two, who became depressed in mind owing to the removal of her husband to an asylum. She purchased twopennyworth of carbolic acid from a druggist, who supplied it as a disinfectant. This she took, and died in about two hours. At the inquest the coroner said that these cases occurred very frequently, and that there should be some restriction on the sale of carbolic acid, and the jury agreed with him. A short time ago phosphorus was, so to speak, the popular poison in Newcastle, matches being freely used. The ends were made into a solution and swallowed, but, some recoveries having been reported, carbolic acid is now becoming the favourite agent.

Important Action at Stockton: Sale of Poisons.

On Monday last, at the Stockton county court, an action was brought against a firm of grocers by the Pharmaceutical Society for selling a bottle of Freeman's chlorodyne, which, on the evidence of analysts, was found to contain morphia. Dr. Luff of St. Mary's Hospital, London, showed that morphia was a poison and dangerous to life, especially to children, one-twelfth of a grain having been known to cause the death of an infant. It was contended by the defendant's counsel that chlorodyne was not a poison in the meaning of the Act, but simply a compound of various drugs, of which morphia was an ingredient. The judge, however, said he must follow the decision in Piper's case, which was exactly similar. He therefore gave judgment for the prosecutors for £5, with costs on the higher scale. His honour refused leave to appeal.

Newcastle-on-Tyne, Jan. 31st.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Royal Public Dispensary, Edinburgh.

THE annual general meeting of this dispensary was held last week, Lord Provost Russell occupying the chair. During the past year 6333 persons had obtained advice and medicine at the dispensary, while 2860 had received treatment at their own homes. The total number of patients, including midwifery and vaccination cases, amounted to 10,062. The subscriptions received during the year amounted to £132 13*s.* 6*d.* and the expenditure was £180 13*s.* 11*d.*

The Abuse of Medical Charities in Edinburgh.

In seconding the adoption of the report submitted to the annual general meeting of the Royal Dispensary, Edinburgh, Professor Struthers called attention to the excess of medical charity in the city, and the want of some regulation of it. In the city they had four hospitals and ten dispensaries, with out-door departments. In 1890 the in-door patients at the Royal Infirmary numbered 8600 and the out-door patients 26,000. At the Sick Children's Hospital the numbers were 685 and 7610, at Chalmer's Hospital 229 and 3428, and at the Maternity Hospital 320 and 670, giving a total of 9834 in-door and 37,708 out-door patients. At the ten dispensaries the number of patients during the same year was 55,553, making a total of 93,261 out-door patients. With the 9834 in-door patients at the hospitals this gave a total of 103,095 patients receiving medical charity during the year in a city with a population of a little over 236,000. Even allowing that a number of the patients were from the country, a large proportion of the population of the city received gratuitous medical advice. In recent years special dispensaries had arisen in the city, and it seemed to him that some of these were unnecessary and bewildering to the public. He did not hesitate to say that there was an abuse of medical charity in the city, especially as regarded the dispensaries. He was aware that the medical educational aspect of the question had partly led to the development of some of the dispensaries, but he did not admit that the interests of that education had been promoted by the development, nor could he admit that some of these institutions had been established in the medical school interest. He suggested that an association or committee might be appointed to look into the matter and advise the public which of the institutions deserved support. Lord Provost Russell, M.B., who occupied the chair, said he had watched the growth of some of the new dispensaries, and he ventured to say that the time had come when they must do something in the way of codifying the medical charities of the city.

Discussion on Intra-cranial Surgery at the Edinburgh Medico-Chirurgical Society.

Arrangements have been made by the council of this society for a discussion on Intra-cranial Surgery on the 7th and 21st of February. Professor Annandale will open the proceedings on the 7th. On the 21st the proceedings will begin with an exhibition of patients. It is anticipated that most of the work done in Edinburgh in this important department will be brought before these meetings, and that it will form a valuable contribution to the literature of the subject.

Small-pox in Edinburgh and Leith.

During the past week seven new cases of small-pox were reported in Leith and one in Edinburgh. In Leith three patients died in hospital of small-pox.

Conference in Edinburgh on the Local Government (Scotland) Act.

Last week a conference of representatives from Scottish county councils was held in Edinburgh for the purpose of considering proposed amendments to the Local Government (Scotland) Act of 1889. The meeting was held on the suggestion of the Secretary for Scotland. A number of

amendments, which need not be referred to here, as they were mainly questions of general policy, were discussed and voted upon. One of the questions brought up was, however, of medical interest. The representative from Sutherlandshire moved a resolution to the effect that the county councils should have full control of their officers of public health, and that the powers at present possessed by the Board of Supervision be dispensed with. The effect of the resolution would be, he said, simply to place these officers on the same footing as the other officials of the county councils. This was opposed by Lord Overtoun and others, who pointed out that the medical officers of health might in the discharge of their public duties become unpopular, and those affected by their action might try to get them deposed were it not for the power possessed by the Board of Supervision. Others spoke in condemnation of the proposal, and advocated placing the principal medical officer at the head of the whole health department of the county. The representative from Banff said that things had reached a crisis in his county, where the sanitary inspector declined to coöperate on certain points with the medical officer. He held that the duties of these officials should be more strictly defined to prevent overlapping, and there should be only one department of public health, with the medical officer at its head. The resolution was amended so as to read that the county council should have power to define the duties of their officers of health so as to prevent overlapping, but that the present system as regards dismissal should be retained, and it was in this form adopted. It may be here remarked that one of the points in the public health service requiring rearrangement is the relation of the medical officer of health to the sanitary inspector. There surely ought to be no doubt as to who is the responsible head of the public health department in counties; and that nothing but harm can follow upon a dual control. It is simply insufferable that sanitary inspectors should be in a position to decline to coöperate with the medical officer; or, as is not unknown in Scotland, that they should be able to send in independent reports to county councils bearing upon matters which essentially belong to the responsible medical officer.

The Edinburgh Royal Infirmary and the Press.

At the meeting of the managers of the Royal Infirmary on Monday press representatives were present for the first time. A discussion was originated by Professor Rutherford as to what was to be regarded as public and what as private business; the Lord Provost, who occupied the chair, firmly resisted all attempts to nullify the decision of the preceding meeting.

The Glasgow Infirmaries.

The annual statement of the amount of work done in the three great infirmaries of Glasgow is now before the public. The Royal Infirmary: In 1893 there were admitted as in-door patients 5197; died, 590; mortality, 11·3 per cent.; died within forty-eight hours of admission, 125; mortality, excluding the last-mentioned cases, 9·1 per cent.; daily average of in-door patients, 543; average residence, 37 days; resident staff, 180; daily average population of infirmary, 723. In the out-door department there were 46,863 attendances. Cost of each fully occupied bed, £57 16*s.* 11½*d.*, an increase of about £1 6*s.* on previous year's average; average cost of each patient treated to a conclusion, £6 0*s.* 9½*d.* In the Ophthalmic Institution, which now forms part of the Royal Infirmary, 451 patients were treated, and 2149 were seen (first attendances) in the dispensary. The financial position of the Infirmary is stated as follows: Revenue—Ordinary, £20 319 16*s.* 2*d.*; extraordinary, £14,503 0*s.* 11*d.*; total, £34,822 17*s.* 1*d.* Expenditure—Ordinary, £31,411 12*s*; extraordinary, £2935 2*s.* 5*d.*; total, £34,346 14*s.* 5*d.* Total revenue exceeds total expenditure by £476 2*s.* 8*d.* While this is satisfactory enough the directors draw attention to the startling deficiency in what is termed "ordinary" revenue, and make a vigorous appeal to the public for a substantial increase in the ordinary subscriptions. It may be mentioned here that the visiting staff of the Royal Infirmary are in tribulation at present regarding their honorarium, the four gentlemen last appointed receiving only fifty guineas while the other members receive 100. It is not pretended that those last appointed are less worthy of consideration than the others, though it may strike the general public in that way when it is seen that so substantial a distinction is made between two groups of members of the same staff otherwise on a footing of equality. No reason has been assigned for the reduction, which should either not have been made at all, or, if due to motives of economy, should have formed part of a general reduction all round.—Western Infirmary: In-door patients, 4083; average daily number of in-door patients, 388·46; average period of residence, 34·63 days; died, 357, or 9·63 per cent.; died within forty-eight hours of admission, 101; mortality, excluding these last, 7·10 per cent; cost of each bed fully occupied, £55 19*s.* 8*d.*; average cost per patient, £5 6*s.* 6½*d.* Out-door patients, 13,637; number of consultations, 42,201. The financial position is as follows: ordinary income, £16,007 2*s.* 2*d.*; ordinary expenditure, £21,747 10*s.* 5*d.*; deficit as regards ordinary funds, £5740 8*s.* 3*d.*; extraordinary income, £13,097 9*s.* 3*d.*, which sum, together with £2395 11*s.* 10*d.* which was transferred from another fund, met all extraordinary expenditure, extinguished the deficit in ordinary income, and left the institution £8683 15*s.* 4*d.* to the good on the year's work.—Victoria Infirmary: In-door patients, 1158; died, 109; mortality, 9·9 per cent.; died within forty-eight hours, 32; mortality, exclusive of these last, 7 per cent.; average residence of those treated to a conclusion, 27 days. In the out-door department there were 25,697 consultations. Average cost of each fully-occupied bed, £61 7*s.* 5*d.*; average cost per patient, £4 9*s.* The financial position of this infirmary is very gratifying—in fact, it seems to be the only one of the large institutions which pays its way,—though it must be admitted that from the first this, the youngest of the Glasgow infirmaries, has had most exceptional good fortune. Ordinary income, £4941 19*s.* 3*d.*; ordinary expenditure, £4909 12*s.* 10*d.*; surplus, £32 6*s.* 5*d.*; extraordinary income, £46,126 5*s.* 9*d.*, of which about £9000 has been spent on redeeming certain burdens on the ground on which the infirmary stands, leaving about £37,000 to carry to stock account. A new wing has just been added to the infirmary, giving a total accommodation of over 150 beds for the entire institution.

Typhus Fever at Thurso.

Recently an outbreak of fever occurred at Thurso, which at the outset was reported to be of the nature of enteric fever, but which later on proved to be typhus fever. As help was requested from Aberdeen, a hospital nurse was sent, who, after working assiduously for some time, broke down. Another was sent to take her place, who also had to go home, as she felt unable to continue work, and after she arrived at Aberdeen she was found to be suffering from typhus fever, from which she is now happily convalescent. A third nurse was sent out to continue the work; she in turn fell ill and ultimately died. An investigation was set on foot, and assertions were made that the epidemic had been originally enteric fever, and that the cases of typhus fever were caused by infection brought from Aberdeen by the nurse, who might have been in contact with cases of the disease, as it might with some reason be supposed that typhus fever would be present in a large centre such as Aberdeen. This unwarrantable statement has received a flat contradiction from Dr. Matthew Hay, medical officer of health for Aberdeen, who proves to demonstration that this view is untenable. Since October, 1892, he shows we have had seven cases of typhus fever, four of these being in March, 1893, one in April, and two in December. One of the latter two was the case of the nurse, who had been sent to Thurso and who returned to Aberdeen on Nov. 25th, and shortly after fell ill. The other case occurred some days after. Thus from April till November there were no cases of typhus fever in Aberdeen, so that the latter place cannot be held responsible for spreading the infection. He further states definitely that the nurses were infected in Thurso, one of them dying there, and that the other two were laid up with fever immediately after they returned home.

In consequence of his having received an appointment in Singapore, Dr. P. Fowlie has resigned the office of house surgeon in the Hospital for Sick Children at Aberdeen, and Dr. Wm. Cruickshank has been appointed in his room.

Jan. 30th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Catholic University Medical School; Medical and Scientific Society.

A MEETING of this society was held on the 29th inst., when Dr. McWeeney exhibited specimens of typhoid intestine, with pure cultures from the same case. The following papers

were read: Mr. Devitt, Treatment of Cholera; Dr. Staunton, Enlarged Prostate and its Treatment.

Poor-law Returns.

The Local Government Board, in anticipation of the detailed information in the next annual report, have issued a summary of the financial statistics of the various Poor-law unions for the year terminating Sept. 29th last. It appears that the total receipts from poor rates, Parliamentary grants, repaid relief and loans, &c., amounted to £1,464,863, or an increase of £120 138. The expenditure for the relief of the poor came to £162,324, showing a decrease of £9677, as compared with the preceding year. The total amount expended under the Poor-law Acts, including all the other various services administered through the Poor-law Guardians, was £1,388 603, or a decrease of £17,653. During the year there were 318,143 persons relieved in workhouses, and 108,929 persons were partly supported on out-door relief. In addition 1034 persons were provided for in institutions for the blind and deaf-and-dumb, making a total of 428,106 paupers. It is gratifying to learn that there was a decrease of 6384 paupers during the year, as compared with 1892 The average daily number of paupers in workhouses was 40,590, against 40,600 the previous year. Expenses for sanitary purposes increased by £20,919, partly due to the extra expense incurred during the threatened epidemic of cholera. The expenses under the Medical and Charities and Vaccination Acts were £162,572, showing a decrease of £1966.

Memorial to the late Surgeon-Major Parke.

A meeting of the general committee was held last week in the Shelbourne Hotel, Dublin, for the purpose of receiving a report from the executive committee appointed to carry out the details of the movement. Since October last, when the executive committee were appointed, they had obtained £440 from 257 subscribers. The expenses and liabilities ware £67, outstanding subscriptions £48, and there was thus left available for the purposes of the fund, after deducting expenses, a sum of £421 4*s.* 9*d.* It was expected in addition that a considerable sum would be obtained from the colonies There was a practical unanimity, with few exceptions, that the memorial to Surgeon-Major Parke should be a statue erected on some site to be afterwards determined, and a resolution adopting this suggestion was proposed by Dr. Walter Smith, President of the Royal College of Physicians, and adopted by the meeting. It will depend upon the amount contributed as to whether the statue shall be one erected in the open air or under shelter; if the latter, the expense would be very much less. Estimates have been obtained for erecting a statue, and they vary from £500 to £1200. The meeting was addressed by Sir John Banks, K.C.B., Surgeon-Major Collis, Mr. Wheeler, the chairman (General Moncrieff), and others, and the proceedings terminated with a vote of thanks to the chairman.

Belfast District Lunatic Asylum.

In reply to a circular issued by the Inspectors of Lunatics on Dec. 7th, 1893, as to the causes of the increase of insanity, Dr. Merrick, Resident Medical Superintendent of the Belfast Asylum, has published a report showing that the average rate of increase of admissions for the ten years 1883–92 has been 18·7. Dr. Merrick points out that the proportion of the population from which the asylum admissions are drafted—viz., the factory, artisan, and labouring classes—bear a much larger proportion to the total aggregate of the city population than will be found in any area of a similar size and population in Ireland. In discussing the causes of mental diseases, Dr. Merrick notes that 14½ per cent. of the admissions are directly caused by heredity, and he says he has traced 186 cases to parentage of asylum inmates, generally one parent and most frequently the maternal; 11½ per cent. of the admissions are due to alcoholism, and, further, Dr. Merrick thinks the unsuitable and inefficient diet of the factory workers is also a strong factor in the causation of insanity, especially when combined with long working hours in unhealthy trades.

The Belfast Hospital for Sick Children.

The annual meeting of the supporters of this hospital was held on Jan. 26th. During the past year there were 10,853 extern and 384 intern cases. The expenditure has, owing to the greater number of patients, been increased by £65 15*s.* 4*d.* Special reference was made to the regret felt by the board of management and the medical staff at the resignation of Dr. John W. Byers (on his appointment to a professorship at Queen's College) of the post of physician which he has held for the period of fifteen years, and satisfaction that he is to be on the consulting staff. Dr. Howard Sinclair has been made full physician, Dr. S. B. Smyth assistant physician, and Dr. J. S. Morrow assistant surgeon.

Queen's College, Belfast.

Sir David M. Barbour, D.Lit., K.C.S.I., member of Council of Governor-General of India, who is a graduate of Queen's College, Belfast, is at present in this country, and is to be entertained at a complimentary dinner at the college. The fancy fair, to be held in May on behalf of the Students' Union, promises in every way to be a great success. On Wednesday, 31st inst., Mr. F. R. Benson and his Shakespearean Comedy Company are to give a *matinée* performance of "The Merchant of Venice" in the theatre, the proceeds of which are intended for the benefit of the Students' Union Bazaar.

County Antrim Infirmary.

From the annual report of this institution in Lisburn, I find that 328 patients were admitted during the year ending Nov. 30th, 1893, while there were 407 extern cases. There is a balance in the hands of the treasurer. Allusion is made to the loss the hospital has sustained by the death of Dr. Samuel Musgrave, the late consulting surgeon. Mr. Fagan, of Belfast, has been appointed consulting surgeon in his place.

The Samaritan Hospital, Belfast.

At the annual meeting held on Jan. 29th from the medical report, I find that during the year there were 97 intern and 436 extern patients; 81 operations were performed, including 13 abdominal sections, with only one death. There is a balance of £167 12*s.* 6*d.* to the credit of the hospital. Reference was made to the death of Dr. W. K. McMordie, the senior surgeon and founder of the institution, which took place on Dec. 7th, and a resolution was passed recording the appreciation of the services rendered by him.

Health Lectures in Belfast.

In accordance with an arrangement made with the scheme under which the Dunville chair of Physiology was formed by the Sorella Trustees, Professor Thompson is to announce a course of popular lectures on Health in Queen's College, Belfast. The lectures, which are to be open to the public free of charge, will commence on Feb. 7th, and are to be six in number.

Jan. 30th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Prophylaxis of Cracked Nipples.

THE direct relation of mammary abscess occurring during the period of suckling and excoriations of the nipple is now fully admitted. Many mothers object to suckling their infants on account of the dread of this complication. Artificial feeding with its frequent failures is then resorted to, and the child suffers. Antiseptic washing of the nipples has greatly diminished the frequency of abscess of the breast, but cracked nipples continue to be of common occurrence. For the last ten years Professor Pinard has been in the habit of advising nurses as a matter of routine to keep the nipples covered with a compress saturated with a solution of boric acid. This precaution has had the effect of markedly diminishing the frequency of lymphangitis, but instances of an increase of temperature in young mothers due to microbian infection of the nipples are still numerous. M. Lepage[1] strongly recommends that the nipples should be regularly washed with the following solution: red iodide of mercury, 10 to 20 centigrammes; spirit of wine, 50 grammes; glycerine, 500 grammes; distilled water, 450 grammes. If after using this for a few days the ulceration disappears, substitute a solution of boric acid. Any crack that may develop is covered with tarlatan moistened with the mercuric solution. The following figures appear to confirm M. Lepage's good opinion of the comparative value of his method. In 331 cases of lying-in women whose breasts were treated by the Pinard method there was an increase of temperature in 67, the corresponding figures in M. Lepage's cases being 23 out of 440. Moreover, the healing of the cracks is said to be expedited and the pain greatly diminished by the mercurial treatment.

[1] Société de Médecine Publique, Jan. 24th, 1894.

Epidemics in France.

At Marseilles I am informed that a serious outbreak of influenza is committing ravages amongst the inhabitants. The *personnel* of the octroi and Customs are amongst the chief sufferers, and the disease is rife amongst the stall-holders at the central market. At Nantes the population have to thank a ship for the epidemic of small-pox present in their midst. In the space of two months there have been registered in this town forty cases, but, happily, with only six deaths.

Albuminous Periostitis.

Professor Ollier of Lyons was the first to describe the rare disease above mentioned. Its essential characteristic is the accumulation beneath and in the substance of the periosteum of a colourless or yellowish, sticky, albuminous liquid, similar to synovial fluid. M. Hugounenq[2] has recently analysed the liquid collected from two cases. It is transparent, yellowish, and distinctly alkaline; its sp. gr. is from 1020 to 1035, and floating on its surface are often drops of fat. When heated to 80°C. it coagulates into a solid mass. If left exposed to the air it resists putrefaction, although it contains albumen and—according to M. Dor—staphylococci. The proteids present consist of a nucleo-albumen, which, decomposed by pepsin, yields 13 per cent. of nuclein, some phosphorus, and, in much larger proportions, albumen which is identical with serum-albumen. The extractive matters are urea (0·01 per cent.), succinic acid (0·08 to 0·10 per cent.), and an undetermined nitrogenous substance. Creatin, leucin, tyrosin, uric acid, peptones, and sugar were absent, while fat was present in variable proportion. The ashes contained salts, mostly NaCl, and also potash, lime, sulphuric and phosphoric acids, as well as carbonate of sodium. It is thus seen that the fluid of this curious affection closely resembles that of hydrarthrosis, being, indeed, practically identical with it.

A New Hospital for Paris.

Paris is lavishly supplied with hospitals, but yet another establishment for the treatment of the sick will not be *de trop*. Every visitor to this capital knows the Bon Marché. Madame Boucicaut, the late owner of that vast emporium, died in 1887, leaving all her fortune, 40,000,000 francs, to the Assistance Publique, which was to pay out of it legacies to the amount of 32,000,000 francs. The remainder, reduced to 7,000,000 francs by litigation, was destined by the deceased for the construction of a new hospital in the poor and densely-populated district of Grenelle. This sum being deemed inadequate, seven years have been allowed to elapse before beginning the project in order that the capital might, by the accumulation of interest, reach the total of 10,000,000 francs. The ground has been chosen, and some idea of its extent may be gathered from the fact that it will be 9000 metres larger than that upon which the Hôtel Dieu stands. The cost of construction will be 2,000,000 francs, the remaining 8,000,000 francs being reserved for the maintenance of the establishment. The Hôpital Boucicaut will be composed of eight distinct blocks, four medical and four surgical, equally distributed between men and women; there will also be a maternity department of twenty-four beds. Sixteen rooms will be reserved for sick *employés* of the Bon Marché. This will make up a grand total of 162 beds. A dispensary with a large out-patient service will be attached. All the buildings will be connected by subterranean passages, and the entrance to the hospital will be in the Rue de Vouillé. The Hôpital Boucicaut will be a fitting monument to the memory of a woman whose charity during her lifetime was unbounded.

Jan. 30th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Charitable Institutions in Victoria.

FROM the annual report of the inspector of public charities in Victoria just issued it appears that there are seventy-six charitable institutions in the colony, twenty-three being metropolitan and fifty-three provincial. These include benevolent asylums, which are practically poor-houses. The inspector remarks that the accommodation provided by these benevolent asylums is not equal to the wants of the population, and consequently hospital beds are largely used for purely "benevolent cases," and if these could be removed a saving could be effected on the cost of their maintenance. The accommodation provided by the hospitals is 1965 beds, and the mean cost per head for daily average of patients is £62 1*s.* 2*d.* per annum. Some striking differences are to be noted in the cost of maintenance at different institutions. The cost per head at the Women's Hospital, Melbourne, is £113, at the Melbourne Hospital £84, and at the Children's Hospital £59. The average rate of mortality is 9·7 per 100.

Rupture of the Uterus successfully treated by Hysterectomy.

At the last meeting of the Medical Society of Victoria Dr. R. H. Fetherston read notes of the following case. A patient aged thirty-five years, a multipara, was seen soon after midnight in a state of extreme collapse. She was in labour with a hydrocephalic fœtus; the uterus was ruptured and bleeding profusely. Dr. Fetherston perforated the head, turned and delivered, and as profuse hæmorrhage continued he opened the abdomen under ether, tied the uterine arteries, and ligatured the body of the uterus with silk, transfixing it in five places as in ligature of a nævus. He then removed the body of the uterus and sutured the stump into the lower angle of the abdominal wound. The patient rallied from the profound shock and recovered.

Loreta's Operation for Stricture of the Pylorus.

At the last meeting of the Victorian Branch of the British Medical Association Mr. H. O'Hara showed a patient upon whom he had performed Loreta's operation three years previously. At the time of the operation the pyloric opening would not admit the tip of the little finger. The patient had had no recurrence of her previous symptoms.

Graves' Disease following Influenza.

At the same meeting Dr. McAdam read notes of a case of exophthalmic goitre following influenza which had been apparently cured by the administration of strophanthus. Dr. McAdam also drew attention to the similarity between the effects of an overdose of thyroid extract and the symptoms of Graves' disease, and supported the view that the latter were due to over-activity of the thyroid gland secreting some substance necessary to the nutrition of the nervous system.

[2] Académie des Sciences, Jan. 15th.

Obituary.

HARRY WARNELL DENTON CARDEW, M.R.C.S.

VERY many outside the circle of his own bereaved relatives mourn the death of Mr. Harry Warnell Denton Cardew, which took place on Jan. 29th. Though only thirty-three years of age, he had lived a life of much activity and usefulness, and those who knew him best report that a career of great promise is closed. Before entering upon his studies for the medical profession Mr. Cardew had seen active service in the field. He served with the Turkish Red Crescent Society during the Russo-Turkish War of 1877–78, and with such distinction that he was decorated as Chevalier of the Fourth Class of the Imperial Order of the Medjidie. About three years later he entered as a student at the London Hospital Medical College, and was respected by his teachers and his fellow-students as a painstaking and diligent learner. He became a Member of the Royal College of Surgeons in 1881 and commenced practice in the City. He soon devoted himself, however, to the study of the medical applications of electricity, and worked at this subject with assiduity. His former teachers, who gave him opportunities of examining their cases for diagnosis and treatment, know that his reports were accurate and trustworthy.

In a communication to THE LANCET of Feb. 28th, 1891, on the Value of Diminished Electrical Resistance of the Human Body as a Symptom of Graves' Disease, Mr. Cardew gave a rational explanation of the phenomenon which the late Professor Charcot considered to be of great value in the diagnosis of doubtful or typical cases of the disorder. The investigations, carefully conducted, showed that the diminution of electrical resistance was simply the result of the abnormal resistance of the skin so usual in neuro-cardiac disorders and was not intrinsic to the affection itself. In THE LANCET of July 4th and 11th, 1891, Mr. Cardew contributed a useful paper on the Practical Electro-Therapeutics of Graves' Disease. One who was his former teacher knows how conscientiously the observations

recorded in this communication were made. It was the aim of the writer to make the electrical treatment self-applicable by the patient, and it was recommended that a constant current from not more than four ordinary cells should be employed, the positive pole being applied to the nape of the neck and the negative moved up and down the side of the neck from the mastoid process along the course of the great nerves, the administration being continued for six minutes thrice daily. The paper was a useful contribution to electro-therapeutics, and presented in practical form the experience of many observers who had employed galvanism in the treatment of disorders of the rhythm of the heart. The subject of this memoir presents one more of the not unusual examples of a student of a certain branch of pathology becoming the victim of a disorder within the limits of those in which he has been so much interested. For quite two years Mr. Cardew had a rapid heart. The rate of pulsation was always abnormally great, but during certain periods it maintained and overpassed 120 per minute. Occasionally dyspnœa occurred, and unfortunately there was an increasing tendency to obesity. His mental activity, however, was in no way diminished, and in November, 1892, he added to his anxieties by starting the *Clinical Journal*. The editorial duties, however, were labours of love to him; he adopted a high tone in his journalism and adhered strictly to the lines he had laid down of reporting the clinical lectures and clinical observations of the teachers in the great hospitals. About the middle of November a severe attack of influenza, attended with pneumonia and pleuritis, rendered all active duties impossible. There was temporary recovery, but the heart could not bear the shock. The phenomenon of "bruit de galop" became manifest, and this was the precursor of an advancing albuminuria. He leaves a widow and two children to mourn their loss.

A fellow-student of Mr. Cardew sends us a few remarks respecting the career of his late friend, and the substance of them we append: "As a student Cardew soon showed that he was capable of good hard work as well as of being the leader in all social matters. His earlier examinations were passed with credit, but before he could enter for his final examinations domestic misfortunes compelled him for a time to abandon medical pursuits. As soon, however, as resources were within his power he set to work again and easily obtained his qualification to practise, and set up for himself in the City. He spent all his leisure time in the study of electricity in its therapeutical application, and very speedily removed westward to Harley-street, where he confined himself almost exclusively to this speciality. Cardew will be chiefly remembered as the most genial of companions and most generous of men, and as one who, with all his love for a good tale, never once allowed himself to say an ill-natured word of anybody."

JOHN VALENTINE, M.B., C.M. ABERD.

THE friends and old fellow students of Dr. Valentine will hear of his death with the deepest regret and surprise. Dr. Valentine was born at Arbuthnot, Kincardineshire, in 1868, and was therefore only twenty-five years of age. He was educated at the Montrose Academy and studied medicine at the University of Aberdeen. Here he was a most diligent student, and succeeded in passing all his examinations six months before attaining the age of twenty-one. After graduating he made three voyages to India as ship's surgeon, and one to China and Japan. In 1891 he was appointed house surgeon to the Pendleton branch dispensary of the Salford Royal Hospital. This post he held until the end of 1893. Six months before his death many of his friends noticed that his health was failing, but it was only at the end of December last that he was examined medically. He was then found to be suffering from most extensive pulmonary tuberculosis, and his death occurred three weeks later, on Jan. 24th.

Probably Dr. Valentine was not aware how extensive the pulmonary mischief had become, but as a medical man he must have known the serious nature of his illness, yet he continued bravely at his post, with true Scotch determination, to the last. It is probable that, knowing the fatal nature of his ailment, he preferred—as do so many medical men—to continue his work as long as possible and to die "in harness." For several months he continued to make his numerous daily visits—how he managed to do so no one knows—with great regularity though he himself was far more seriously ill than three-fourths of his patients. It is extremely sad that another promising career should have been terminated so prematurely by tuberculosis. By his kindly disposition and unassuming manner he gained the love and respect of his patients and the esteem and sincere regard of his colleagues. During the few years that Dr. Valentine practised his profession his work was done in the most faithful and conscientious manner, and of him it can truly be said, "He was a man who bravely and nobly did his duty." He was interred at St. John's Church, Pendlebury, on Jan. 27th, the funeral service being conducted by the Rev. Canon Hicks, M.A.

CHARLES FREDERICK PORTER, M.R.C.S. ENG., L.R.C.P., L.M. IREL.,

WE regret to announce the death of Mr. Charles Frederick Porter, which occurred on Dec. 12th, 1893, at Warracknabeal, Victoria, Australia. Mr. Porter, who was born in 1854, received his medical education at the Manchester School of Medicine, and after being for a few years in private practice was appointed medical officer of health and port sanitary and medical officer at Fleetwood. In 1883 he was one of twelve medical men sent by the English Government to Egypt at the time of an Asiatic cholera epidemic, and at the expiration of this mission he was appointed port sanitary medical officer at Melbourne. This position he resigned on an outbreak of small-pox at Melbourne, having been selected by the Victorian Government to deal with it. As a result of his conspicuous success in the task he was offered a permanent position in the public health department at Victoria; but his health, never very strong, had suffered under the arduous nature of his duties, and he preferred to remove into the country and, in private practice, adjust his labours to his strength. He never, however, recovered robust health and died shortly afterwards at the early age of thirty-nine.

G. J. HEARDER, M.D. ST. AND.

DR. HEARDER, whose death took place on the 17th ult., had for twenty-seven years held the office of medical superintendent of the Joint Counties Lunatic Asylum at Carmarthen. At the time of his appointment the asylum had been established about twelve months only, but under his wise and skilful management it came to be recognised by the Commissioners in Lunacy as one of the best-conducted refuges for the insane in the kingdom. As well as for his great knowledge of mental diseases, Dr. Hearder was widely known in scientific circles as an expert in meteorology, a subject to which he contributed some important results of his own observation at the institution over which he presided. Amongst the inhabitants of Carmarthen and the residents in the vicinity of the town the loss of his cheery presence will be keenly felt.

Medical News.

EXAMINING BOARD IN ENGLAND OF THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the First Examination of the Board in the subjects indicated under the "five years regulations" at the quarterly meeting of the examiners:—

Part I: Chemistry and Physics.—**Herman Aspinall, University College, Liverpool; Vaughan Bateson, Yorkshire College, Leeds; David Bellilios, St. Mary's Hospital; Charles Dudley Bishop, Charing-cross Hospital; Albert Edwin Cardwell, London Hospital; Charles Stanley Cato, Westminster Hospital; James Edward Collins, London Hospital; Franklin Cox, University College, Bristol; Thomas Sidney Davies, University College, Bristol; Timothy Howell Davies, Middlesex Hospital; Ernest Blair Dowsett, King's College, London; Charles Maxwell Ekins, University College, London; Frederick Hudson Evans, King's College, London; John Gardner, Firth College, Sheffield; William Robert Green, Guy's Hospital; William Wilfred Halsted, St. Thomas's Hospital; William Henry Harland, Middlesex Hospital; James Hugh Harrison, Firth College, Sheffield; John Owen Harvey, Mason's College, Birmingham; Wm. John Saundry Harvey, Guy's Hospital; Richard Stirke Flemying Hearn, St. Bartholomew's Hospital; Francis Harold Rodier Heath, Guy's Hospital; George H. Herbert, London Hospital; Wm. T. Jackson, Owens College, Manchester; Nicholas Joseph Kendal, Mason's College, Birmingham; Augustus Kinsey-Morgan, Guy's Hospital; Thomas Leah, St. Mary's Hospital; Colton Taylor Lewis, King's College, London; Ernest Archibald Longhurst, Guy's Hospital; Charles Antony Lower, Guy's Hospital; Bertram Sydney Osmund Maunsell, St. Bartholomew's Hospital; Alexander Mercer, University College, London;**

Ernest Richard Millar, University College, London; Edward Bertram Leslie Moore, The College, Epsom; Charles Cyril Morgan, St. Bartholomew's Hospital; Ruley Ewart Mounsey, St. George's Hospital; William Musselwhite, private study; Reginald Fredk. Noyes Overton, St. Mary's Hospital; Edward Francis Palgrave, St. Bartholomew's Hospital; James Phillips, University College, Bristol; James Herbert Robinson, Charing-cross Hospital; Edward Halford Ross, St. Thomas's Hospital; Cyril Shepherd, Guy's Hospital; Charles Seaver Smith, Mason's College, Birmingham; George Herbert Spencer, London Hospital; Basil Hubert Howard Tripp, St. Mary's Hospital; Henry Stanley Turner, School of Science and Art, Stoke-on-Trent; Charles Gordon Watson, St. Bartholomew's Hospital; Basil Fenton Wingate, St. Mary's Hospital.

Part II.: Practical Pharmacy.—Frank Atthill, Charing-cross Hospital; Charles Edgar Blackstone, Middlesex Hospital; Frederick Arthur Coates, University College, Bristol; Rowland William Collum, Charing-cross Hospital; Franklin Cox, University College, Bristol; Thomas Sidney Davies, University College, Bristol: Edgar Steele Edwards, University College, Bristol; John Gardner, Firth College, Sheffield; John Blake Hall, Yorkshire College, Leeds; John Owen Harvey, Mason's College, Birmingham; Geoffrey Charles Strom Hobbs, St. Bartholomew's Hospital; Richard Rothwell Horley, Middlesex Hospital: Alfred Johnson, University College, Liverpool; William Taylor Milton, Guy's Hospital; Richard Galway Murray, St. George's Hospital; Arthur Harry Parker, Charing-cross Hospital; James Phillips, University College, Bristol; Frank Herbert Rose, University College, Bristol; George Herbert Spencer, London Hospital; John William Watson, University College, Bristol.

Part III.: Elementary Biology.—Alexander Tateasian Abadjian, London Hospital; Harold Cotterel Adams, Middlesex Hospital; Roland Harrison Allport, St. Thomas's Hospital; William Andrus, London Hospital; Alfred George Henry Anthonisz, University College, London; John Alfred Archer, Mason's College, Birmingham; Ernest Charles Page Barnes, London Hospital; Edmund Howard Barrett, St. Mary's Hospital; George Llewellyn Bates, Charing-cross Hospital; Frank Bawtree, St. Thomas's Hospital; Francis Stephen Goodenough Bayley, St. Thomas's Hospital; Stanley Beley, St. Thomas's Hospital; David Bellhos, St. Mary's Hospital; Vernon Cyril Bensley, St. Mary's Hospital; Frank Miller Bingham, St. Thomas's Hospital; James Frederick Edmund Bridger, St. Mary's Hospital; Vivian Ernest John Bristowe, St. Thomas's Hospital; Robert Brookes, Westminster Hospital; Evelyn Kempson Brown, London Hospital; Edward Wemyss Browne, St. Thomas's Hospital; Malcolm Clement Caley, St. Mary's Hospital; Albert Edwin Cardwell, London Hospital; Arthur Farrington Carlyon, Middlesex Hospital; Ernest Alfred Samuel Cawston, Guy's Hospital; Lionel Sills Daly, Middlesex Hospital; Leonard John Louis De Pavillet, St. Mary's Hospital; Kenneth Harington Douglas, London Hospital; Percy Clarence Douglas, St. Mary's Hospital; George Wm. Hennen Edgelow, London Hospital; Arthur George Elored, London Hospital; Percy Foster, Charing-cross Hospital; Charles Louis Francia, St. Bartholomew's Hospital; Frank Austin French, St. Mary's Hospital; Alexander Stoker Gardiner, St. Mary's Hospital; Horace Charles Garrod, University College, Bristol; Sidney Gaster, London Hospital; Cecil Maurice Goodbody, St. Thomas's Hospital; Allan Gordon Graham, St. Thomas's Hospital; Edward Septimus Graham, St. Mary's Hospital; William Robert Green, Guy's Hospital; Lorentz Vilhelm Hakansson, St. Mary's Hospital; Saville Waldron Hanbury, St. Thomas's Hospital; Frederick Harold Hand, St. George's Hospital; Robert James Harris, St. Thomas's Hospital; William Bradshaw Harris, St. Mary's Hospital; Sydney Harrison, Guy's Hospital; John Hamilton Hart, St. Thomas's Hospital; Frederic Hasler, London Hospital; Ivon Henry S. Hawes, St. George's Hospital; George Heywood Herbert, London Hospital; William George Fonsworth Higgins, Middlesex Hospital: Bernard Featherstone Howlett, St. Thomas's Hospital; Albert Wm. Dunning Hunt, Middlesex Hospital; George Arnold Hutchinson, St. Mary's Hospital; Thomas Jones, Middlesex Hospital; Nicholas Joseph Kendal, Mason's College, Birmingham; Ernest Charles Lambert, Westminster Hospital; Thomas Leah, St. Mary's Hospital; Oscar Ernest Lemin, London Hospital; Harold Samuel Libby, St. Thomas's Hospital; John Henry Lightfoot, St. Mary's Hospital; William James Lord, University College, Bristol; Arthur Leopold Low, London Hospital; Archibald Malcolm Mackintosh, St. Mary's Hospital; Frederic Percival Mackie, University College, Bristol; John Francis McClean, St. Thomas's Hospital; Henry Thomas Mann, St. Mary's Hospital; Bertram Sydney Osmund Maunsell, St. Bartholomew's Hospital; Harry John May, London Hospital; Leslie Milburn, Middlesex Hospital; Frank Mayo Morris, London Hospital; Isaac Llywelyn Morris, St. Bartholomew's Hospital; John Ignatius Worgan Morris, St. Mary's Hospital; Ernest Edward Nicholl, St. Thomas's Hospital; James Charles Stewart Oxley, St. Thomas's Hospital; Gilbert Paira-Mall, London Hospital; Malcolm Gerald Pawle, Guy's Hospital; Thomas Pearson, Charing-cross Hospital; Norman Pern, St. Thomas's Hospital; Cyprian Royston Pike, London Hospital; William George Porter, Charing-cross Hospital; Joseph Bancroft Reade, St. Thomas's Hospital; Horace Sampson Roch, King's College, London; David Samuel, St. Mary's Hospital; Cyril Shepherd, Guy's Hospital; Louis Stephen Shoosmith, St. Mary's Hospital; Stanley James Reeve Shorto, Westminster Hospital; Charles Seaver Smith, Mason's College, Birmingham; Edward Protheroe Smith, Middlesex Hospital; George Herbert Spencer, London Hospital; Charles Henry Straton, St. Mary's Hospital; Basil Hubert Howard Tripp St. Mary's Hospital; Arthur Wren Tuxford, St. Mary's Hospital; Percy Vosper, King's College, London; Norman Brougham Wade, St. Thomas's Hospital; Arthur John Watson, St. Mary's Hospital; James George Watt, Guy's Hospital; George Harry Richard Welsh, London Hospital; William Frederick Willis, St. Mary's Hospital; Herbert Thomas Craig Wilson, King's College, London; Gerald Denton Winston, St. Mary's Hospital.

Part IV.: Elementary Anatomy.—Frank Gladstone Aldrich, Charing-cross Hospital; Maurice Raine Barker, St. Mary's Hospital; George Llewellyn Bates, Charing-cross Hospital; James Warburton Brown, Charing-cross Hospital; Cuthbert George Catterall, Yorkshire College, Leeds; Charles Lewis Francia, St. Bartholomew's Hospital; Cecil Hughes Francis-Williams, St. George's Hospital; Alexander William Harvey Grant, Charing-cross Hospital; Frank Hannah, Owens College, Manchester; Frederick Haslar, London Hospital; Ivon Henry Shipworth Hawes, St George's Hospital; Hugh Fitz-Neville Hine, Middlesex Hospital; Cyril Evelyn Hogan, St. Bartholomew's Hospital; James Edwin Howroyd, Yorkshire College, Leeds; Alfred Johnson, University College, Liverpool; Harold Steele Langdon, Middlesex Hospital; Oscar Ernest Lemin, London Hospital; Colton Taylor Lewis, King's College, London; William McIlroy, Guy's Hospital; Leslie Milburn, Middlesex Hospital; Charles Graham Meade, St. Bartholomew's Hospital; Warren Meade, St. George's Hospital; Ernest Richard Millar, University College, London; Richard Milnthorpe, Yorkshire College, Leeds; Cyprian Royston Pike, London Hospital; Horace Sampson Roch, King's College, London; Hugh Campbell Ross, St. Thomas's Hospital; Walter Joseph Schuller, London Hospital; Charles Seaver Smith, Mason's College, Birmingham; Ernest Symes, University College, Bristol; Thomas Walsh Tetley, Yorkshire College, Leeds; Percy Vosper, King's College, London; Frank Edward Wayte, Owens College, Manchester.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS IN IRELAND: CONJOINT SCHEME.—The following have passed the Final Examination in Medicine, Surgery, and Midwifery:—

E. F. Alleyne, Miss M. S. Bell, J. J. Costello, A. A. Gibbs, T. W. Hawes, E. L. Hunt, W. S. Lee, Denis Molyneaux, H. F. Nolan, J. J. O'Donnell, W. R. Roe, Miss E. A. Tennant, and Thomas Wilson

Passed in Medicine.—J. G. Burne, J. Campbell, C. Kapp, M. J. Cuffe, J. P. Martin, and E. Smith.

Passed in Surgery.—Moore Betty, A. St. L. Burke, John Campbell, W. B. Felton, H. Hunt, C. Kapp, R. J. Maguire, E. A. Malcomson, H. McAvoy, and C. S. Kelly.

Passed in Midwifery.—M. Betty, A. St. L. Burke, M. J. Cuffe, J. J. Doian, J. Fagan, H. Hunt, C. Kapp, J. B. Martin, H. McAvoy, W. F. Pigott, and C. S. Kelly.

Passed in Ophthalmology.—M. Betty, A. St. L. Burke, John Campbell, W. B. Felton, H. Hunt, R. J. Maguire, E. A. Malcomson, H. McAvoy, W. F. McCann, and C. S. Kelly.

DEVON AND EXETER MEDICO-CHIRURGICAL SOCIETY.—At the annual meeting of this society, held at the Devon and Exeter Hospital on Jan. 26th, the following officers were elected for 1894–95:—President, Mr. E. J. Domville; Vice-President, Mr. Curtis; council, Drs. Gordon and Kempe and Messrs. G. H. Johnson, Callaghan, Roher, and Potter; secretary, Dr. Blomfield.

ROYAL MICROSCOPICAL SOCIETY.—The annual meeting of this society was held on Jan. 17th, A. D. Michael, F.L.S., President, in the chair. After the report of the council for the past year and the treasurer's statement of accounts had been read and adopted, the President announced that the following were elected as officers and council for the ensuing year:—President: A. D. Michael, F.L.S. Vice-Presidents: Professor L. S. Beale, F.R.S.; R. Braithwaite, M.D.; Mr. Frank Crisp, F.S.B.; and Mr. T. H. Powell. Treasurer: Mr. W. T. Suffolk. Secretaries: Professor F. Jeffrey Bell, M.A., and Rev. Dr. W. H. Dallinger, F.R.S. Ordinary Members of Council: Mr. A. W. Bennett, M.A.; Rev. E. Carr, M.A.; Mr. E. Dadswell; Mr. C. H. Gill, F.C.S.; R. G. Hebb, M.D., M.A.; Mr. G. C. Karop, M.R.C.S.; Mr. E. M. Nelson; Professor Urban Pritchard, M.D.; Mr. C. F. Rousselet; Professor Charles Stewart, Pres.L.S.; Mr. J. J. Vezey; and Mr. T. C. White, M.R.C.S.

MANCHESTER ODONTOLOGICAL SOCIETY.—The annual dinner of this society was held at the Grand Hotel, Manchester, on Saturday, Jan. 27th, Mr. Thos. Murphy, the President, occupying the chair. Responding to the toast of the Manchester and Salford Medical Charities Dr. D. J. Leech spoke of the increasing usefulness of these charities, and said he had been struck with the decrease, of late years, in the number of crippled children to be seen about Manchester, and he had no doubt that this was entirely due to the surgical work of the hospitals. The Dental Hospital took a creditable part in medical charity, although it did not come under the public eye. On the ground of economy in management and convenience to the public he advocated the construction of a large central hospital, with a central board to govern and arrange the work of all the other hospitals. This hospital should contain at least 700 beds, and should be thoroughly equipped, not only for practice but for the teaching of medicine and surgery. Mr. T. Murphy, replying to the toast of "The Manchester Odontological Society," said it was started eight years ago with some fear lest it might clash with the general association. They had, however, been able to steer clear of what might be called dental politics, and, although a young society, were in a flourishing condition. A library and a museum had been started, and before long he hoped the Dental Hospital would be second to none in the kingdom.

FOOTBALL CASUALTIES.—On the 20th ult., in a game on the Forthill ground at Broughty Ferry, a player "dislocated one of his arms at the shoulder." On the 25th ult., during a match at the Dearne Athletic Grounds, Barnsley, a Barnsley forward fractured his scapula. On Saturday last, in a match at Reading between the Reading Redlands and the Castle Institute, a player fractured his clavicle.

MEDICAL MISSIONS.—A lady interested in medical missions has offered two scholarships of the value of £100 and £50 respectively to women who desire to educate themselves for medical work in the mission field. The scholarships are tenable at the Edinburgh School of Medicine for Women, and particulars can be obtained from the secretary of that school, Surgeon-square, Edinburgh.

THE ITALIAN HOSPITAL.—Count Torniella, president of the institution, occupied the chair at the annual meeting of the governors, which was held in the board-room on the 26th ult. Amongst those present were Sir J. Fayrer and Drs. Naumann and Cavre. By the report, which was subsequently moved and adopted, it appeared that during the year 1893 in-patients to the number of 229 were treated, whilst 4329 out-patients obtained medical relief. These items exhibited a considerable excess over those recorded in the preceding year's returns. The receipts last year reached £1269, whilst the expenditure was represented by the sum of £891. The statistics for the past twelvemonth, as stated above, accordingly exhibit a satisfactory state of affairs in the above hospital.

TESTIMONIAL TO DR. JAMES NICOL, J.P. OF CARNARVON.—On the 24th ult., at a meeting assembled for the purpose, Mr. J. Bold Williams, L.R.C.P.Lond., in the name of a large number of the residents of Llandudno, presented Dr. Nicol of that town with a cheque for £390 (which was afterwards increased to £400) as a mark of respect for that gentleman and their appreciation of his public spirit and professional services on their behalf. Mr. Williams intimated in his address that it was the intention of Dr. Nicol to devote the money to the enlargement and more complete furnishing of the cottage hospital which bore the name of his deceased wife—a statement which Dr. Nicol in his acknowledgment of the gift subsequently confirmed.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN, 20, HANOVER-SQUARE, W.—The court of directors of this society met on Wednesday, Jan. 10th, Sir James Paget, President, in the chair. It was resolved to distribute a sum of £1226 among the 55 widows, 9 orphans, and 4 orphans on the Copeland Fund, now in receipt of grants. A fresh application for assistance was read and a grant made. The expenses of the quarter were £75 19*s.* 6*d.* Two new members were elected and the deaths of 5 reported. A sum of £791 had been received from the trustees of the late Mr. John Robinson Peill. The directors determined to call a special general meeting and to recommend that at that meeting a grant of £50 should be made to the daughter of a deceased member. After Lady Day next the offices of the society will be at 11, Chandos-street, Cavendish-square, W.

DANGERS OF TINNED FOODS.—Notwithstanding the repeated warnings to the public by both the medical and lay press with regard to the dangers which attend the use of tinned foods, cases are constantly occurring in which death may be traced, either directly or indirectly, to the ingestion of articles prepared in this way. On Saturday last Dr. Danford Thomas held an inquiry at the Islington Coroner's Court into the death of a boy who purchased a box of sardines for which he had paid 2½*d.*, eating the whole of the contents. The lad died on Wednesday, Jan. 24th, from the effects of acute inflammation of the stomach and bowels. Much of the potted stuffs which are sold at a low price is prepared abroad and after passing through the hands of the wholesale agent in this country is sold to numerous purchasers, who affix various labels upon the tins, and the same goods may be sold to the public under the names of different brands.

SANITARY INSPECTORS' ASSOCIATION.—A conference of the members of the Yorkshire branch of this association was held at Sheffield on Jan. 20th, under the presidency of Mr. T. Pridgin Teale, F.R.S., of Leeds, the sixth annual meeting of the branch having been held in the former part of the day, at which a satisfactory report was read by the secretary. The chief business at the conference was the reading of a paper by Dr. Littlejohn, entitled "Urban Sanitation," which gave rise to a spirited discussion. Dr. Littlejohn proposed for consideration the question as to the best form of closet for use by the poor. The water-carriage system, he said, was the best, inasmuch as it was cleaner and more convenient. As to the automatic flushing plan, it had been found by the health committee of the Sheffield corporation that some form of it had answered every requirement. The points in its favour were then detailed. Several speakers joined in the discussion, in the course of which the "tipler" system and the trough system were severally commended and their advantages and drawbacks set forth. Dr. Littlejohn summed up the observations made, and the conference terminated by the holding of a meeting of a social character.

LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY.—At a meeting of the Clapham, Brixton, and Streatham Division, held on the 12th inst., at the Limes, Atkins-road, Clapham-park, the following gentlemen were elected officers of the above division of the London and Counties Medical Protection Society, Limited. President: Dr. Field Sutton, Balham-hill. Vice-Presidents: Dr. Barthwell, Dr. Oliver Field, Dr. C. J. Knight, Mr. Lewis Lewis, F. Mitchel, Dr. A. J. Rice Oxley, and Mr. George Braithwaite Wall. Council: J. Busfield, Mr. C. D. Davis, Dr. G. D. Knight, Mr. W. McMullen, Mr. Needham, Mr. G. F. Pollard, Mr. Alfred Pocock, and Dr. J. Reynolds. Honorary Secretary: Mr. Arthur Graham, the Limes, Atkins-road, Clapham-park.

Parliamentary Intelligence.

MR. GARDNER, President of the Board of Agriculture, has signified his intention of appointing a departmental committee to inquire if any amendments can advantageously be made in the present regulations under the Contagious Diseases (Animals) Act in respect of the transit by water and the exportation and landing of cattle. It is understood that Mr. W. Field, M.P., who has had great experience in connexion with the cattle trade, has expressed his willingness to serve on the proposed committee.

HOUSE OF LORDS.

THURSDAY, JAN. 25TH.

Local Government (England and Wales) Bill.

The Marquis of Ripon moved the second reading of this Bill, and in doing so expressed his regret, which he said was shared by every member of that august assembly, that the task should have devolved upon him rather than the leader of the House. The noble lord then dealt with the principles of the measure which they were met to discuss, and which, he said, was intended to complete the Act passed by the late Ministry, and to establish in every rural parish councils which should have confided to them certain powers. District councils would also be appointed, to which would be committed the duties of rural sanitary authorities, highway authorities, and boards of guardians. The constitution and mode of election of these bodies were also described.—The Marquis of Salisbury, after intimating that no direct opposition would be offered to the second reading of the Bill, dealt at considerable length with some objections he entertained with regard to certain of its provisions. He did not see why it was necessary for the measure to touch the question of charities at all. The Bill, in its present form, would strike a heavy blow at the spirit of beneficence which was abroad, and which had done so much for the relief of the rural population, a danger which was illustrated by the present condition of Christ's Hospital. His lordship then proceeded to criticise parts of the measure, and, in conclusion, expressed a hope that the Government would not press forward unduly the committee stage.—The Archbishop of Canterbury followed, and expressed his hearty concurrence with the remarks of Lord Salisbury, especially with regard to the injury the Bill was calculated to inflict on the property of the Church.—The Duke of Devonshire said the second part of the Bill involved questions of principle, and introduced great changes into the administration of the Poor-law—changes which might affect the character and condition of the people not only of the present day but of future generations. Perhaps, said his lordship, the wisest course would be to be content in this Bill to establish parish councils, organise the parish, and define the powers to be exercised by the parish authorities.—Lord Carrington, Lord Onslow, and other speakers having addressed the House, Earl Spencer replied to the strictures which had been passed on certain parts of the Bill, and trusted that their lordships would give the measure their favourable consideration.—The Bill was then read a second time, and the committee stage was fixed for Feb. 1st.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

BARBER, W., L.R.C.P. Irel., has been appointed Medical Officer to the Kilburn Sanitary District of the parish of St. John, Hampstead, vice Eady, resigned.

BUTCHER, A. H., L.R.C.P. Irel., L.R.C.S. Edin., L.M., has been reappointed Honorary Surgeon to the Birkenhead Borough Hospital.

BUTLER, G. H., L.R.C.P. Irel., L.R.C.S., L.M. Edin., has been appointed Medical Officer to the Wealdstone Sanitary District of the Hendon Union.

CRAGGS R. F., M.B Durh., B.S., has been reappointed Medical Officer to the Throat and Ear Hospital, Newcastle-on-Tyne.

CROPPER, JOHN H., L.R.C.P., L.R.C.S., has been appointed Clinical Assistant to the Westminster Ophthalmic Hospital.

DAVIES, RICHARD, M.B., C.M. Edin., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Resident Surgeon to the Branch Dispensary of the General Hospital, Cheltenham.

DE BUTTS, STANLEY B., M.D. Brux., M.R.C.S. &c., has been appointed Anæsthetist to the London Lock Hospital.

DIMMOCK, A. F., M.D. Durh., M.R.C.S., has been reappointed Medical Officer to the Harrogate Cottage Hospital.

ENGELBACH, F. G., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Newtonhampstead Sanitary District of the Newton Abbott Union.

FITZGIBBON, HENRY, M.D. T.C.D., has been appointed Secretary for Ireland to the British Postal Medical Officers' Association.

GORDON, J. F., M.D. Irel., has been appointed Medical Officer to the Branch Workhouse at Mayhull, parish of Liverpool.

GUINAND, P., M.D. Brux., L.R.C.P. Lond., M.R.C.S., has been appointed a Public Vaccinator for Coalville, Victoria, Australia, vice Johnstone, resigned.

HARRIS, A. C. E., M.B. Edin., F.R.C.S., has been reappointed Honorary Physician to the Birkenhead Borough Hospital.

JAMES, WILLIAM H., M.B. Melb., has been appointed, *pro tem.*, a Public Vaccinator for Berwick, Victoria, Australia.

JOYCE, J. F., L.R.C.P., L.R.C.S. Edin., has been appointed a Public Vaccinator for Inverloch, Victoria, Australia.

LYLE, THOS., M.D., C.M. Glasg., has been appointed Medical Officer to the Throat and Ear Hospital, Newcastle-on-Tyne, vice Burdon.

MARWOOD, A. W., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed a Public Vaccinator for Lara, Victoria, Australia, vice Connor, resigned.

MCGEE, WM., L.K.Q.C.P., L.R.C.S. Irel., has been appointed a Public Vaccinator for the Shire of Poowong and Jeetho, Victoria, Australia, vice Ick, resigned.

MEADE-KING, R. LIDDON, M.B., B.S. Durh., M.R.C.S., L.R.C.P., has been appointed Assistant House Surgeon to the Devon and Exeter Hospital.

MUIR, D., M.B., C.M.S. Glasg., has been appointed Medical Officer to the Fourth Sanitary District of the Highworth and Swindon Union.

NICHOLSON, A., M.D. Lond., L.R.C.P., M.R.C.S., has been appointed Honorary Surgeon to the Sussex Eye Hospital, Brighton.

OLDHAM, C. J., L.R.C.P. Lond., F.R.C.S., has been appointed Honorary Surgeon to the Sussex Eye Hospital, Brighton.

OZANNE, F. N., L.R.C.P. Lond., M.R.C.S., has been reappointed Medical Officer to the Harrogate Cottage Hospital.

PENFOLD, H., M.R.C.S., has been reappointed Honorary Consulting Surgeon to the Sussex Eye Hospital, Brighton.

PRANCE, G. H., M.D. Edin., C.M., has been appointed Honorary Medical Officer to the Branch Dispensary of the Cheltenham General Hospital, vice Macnamara, resigned.

RAMSAY, FRANK WINSON, M.D. Durh., M.S., F.R.C.S. Edin., has been appointed Honorary Surgeon to the Royal Victoria Hospital, Bournemouth.

STANSFIELD, G. S., L.R.C.P., L.M. Edin., M.R.C.S., has been re-appointed Honorary Surgeon to the Birkenhead Borough Hospital.

STEWART, ANDREW, L.R.C.P., L.M., L.R.C.S. Edin., has been re-appointed Honorary Surgeon to the Birkenhead Borough Hospital.

TERRY, E., has been appointed Public Analyst for the Anglesey County Council.

TILDESLEY, J. P., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Willenhall Sanitary District of the Wolverhampton Union.

UTHOFF, J. C., M.D. Lond., M.R.C.P., F.R.C.S., has been appointed Honorary Surgeon to the Sussex Eye Hospital, Brighton.

VICKERS, J. B. N., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Gorteston Cottage Hospital, vice Vaux, resigned.

WALTER, W. H., M.D. Brux., L.R.C.P. Edin., M.R.C.S., has been re-appointed Medical Officer to the Second Sanitary District of the Winslow Union.

WEBSTER, R. M., L.R.C.P. Edin., M.R.C.S., L.D.S., has been appointed Vaccination Officer to the detached portion of the Holborn Union at Muswell-hill.

WHITE, F. HARRIS, L.S.A. Lond., has been appointed Medical Officer to the Clapton Mission.

WHITELEGGE, B.A., M.D. Lond., M.R.C.P., M.R.C.S., D.P.H. Camb., has been appointed Chief Sanitary Officer to the Joint Committee of the West Riding Rivers Conservancy.

WILLIAMS, N., M.B. Cantab., M.R.C.S., has been reappointed Medical Officer to the Harrogate Cottage Hospital.

WILSON, HENRY B., M.R.C.S. Eng., has been appointed Health Officer to the Shire of Frankston and Hastings, Victoria, Australia.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's-inn-road, W.C.—House Surgeon.

GUILDFORD AND GODALMING JOINT HOSPITAL BOARD.—Medical Officer for the Isolation Hospital for Infectious Diseases, situate at Woodbridge, Guildford. Salary at the rate of £175 per annum, and the officer appointed will be required to appoint a Deputy, to be approved by the Board. Applications to the Clerk to the Joint Board, County and Borough Halls, Guildford.

HOSPITAL FOR WOMEN (the London School of Gynæcology), Soho-square, W.—Clinical Assistants.

HOSPITAL FOR WOMEN AND CHILDREN, Leeds.—House Surgeon for twelve months. Salary £75 per annum.

HOXTON HOUSE ASYLUM, London, N.—Clinical Assistant. Board, lodging, and washing provided.

LIVERPOOL HOSPITAL FOR CANCER AND SKIN DISEASES.—Honorary Assistant Surgeon.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, N.E.—Physician to out-patients.

NORTHUMBERLAND COUNTY ASYLUM, Morpeth.—Clinical Clerk. Board and residence provided.

OXFORD EYE HOSPITAL.—House Surgeon for one year. Salary £50, with board and lodging.

PARISH OF ST. LEONARD, Shoreditch.—Medical Officer of Health for the Parish of St. Leonard, Shoreditch. Salary £500 per annum. Applications to the Solicitor and Clerk, Shoreditch Town Hall, Old-street, E.C.

RAMSGATE AND ST. LAWRENCE ROYAL DISPENSARY AND SEAMEN'S INFIRMARY.—Medical Officer, unmarried. Salary £120 per year (£10 allowed for substitute during annual holiday), with furnished apartments, gas, firing, and attendance.

ROYAL SURREY COUNTY HOSPITAL, Guildford.—Resident House Surgeon. Salary £80, with board, lodging, and laundry.

SALFORD ROYAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board and residence.

ST. GEORGE'S AND ST. JAMES'S DISPENSARY, 60, King-street, Regent-street, W.—Physician.

Births, Marriages and Deaths.

BIRTHS.

ATKINSON.—On Jan. 29th, at Camberwell New-road, S.E., the wife of W. A. Atkinson, M.B., B.S., of a son.

BAMPTON.—On Jan. 29th, at Brookfield, Ilkley-in-Wharfedale, the wife of Augustus H. Bampton, M.D., of a son.

FALVEY.—On Jan. 25th, at Harcourt-terrace, South Kensington, the residence of her mother, the wife of Surgeon-Major Falvey of a son.

GERARD.—On Jan. 25th, at Marlborough-road, St. John's-wood, the wife of John Gerard, M.D., M.R.C.P., of a son.

GREENWAY.—On Jan. 24th, at Dover, the wife of Surgeon-Captain J. H. Greenway, A.M.S., of a son, who survived his birth only a few hours.

HUNTER.—On Jan. 27th, at Sidmouth, Devon, the wife of Surgeon-Major C. B. Hunter, 5th Punjab Cavalry, of a daughter.

OWEN.—On Dec. 22nd, 1893, at Castle House, Llanidloes, Montgomeryshire, the wife of J. Vaughan Owen, M.R.C.S., L.R.C.P., L.S.A.L., A.K.C.L., of a daughter.

MARRIAGES.

BONAR—NIELSON.—On Jan. 31st, at Glasgow, by the Rev. A. Orrock Johnston, D.D., assisted by the Rev. James Stalker, D.D., Thomson Bonar, M.D. Edin., to Elizabeth Christian (Elsie), daughter of William Nielson, Esq., of the Bank of Scotland.

COLLINS—HERRICK.—On Jan. 31st, at Holy Trinity Church, Brompton, Edward Treacher Collins, F.R.C.S., of 47, Devonshire-street, W., second son of the late Dr. W. J. Collins, of Regent's-park, to Hetty Emily, eldest daughter of the late Lieutenant-Colonel J. L. Herrick, of Ouga Ouga, Hawke's Bay, New Zealand.

HEWLETT—HILL.—On Jan. 25th, at the Church of St. Edmund the King and Martyr, Lombard-street, George Hewlett, Surgeon R.N., son of E. Hewlett, The Priory, Totnes, to Georgina Boycott Hill, second daughter of the late Rev. Pascoe Grenfell Hill, R.N., B.A., Rector of St. Edmund the King and Martyr.

VISE—MUNRO.—On Jan. 25th, at the Parish Church, Frant, Christopher Vise, M.D., to Annabel Emily (Ella), only daughter of Major-General Munro, of Woodside, Frant.

DEATHS.

BARRETT.—On Jan. 23rd, at Heywood, Lancs., William Barrett, M.R.C.S., L.R.C.P., aged 30 years.

CARDEW.—On Jan. 25th, at Dennington-park, West Hampstead, Harry Warnell Denton Cardew, M.R.C.S. Eng., of Harley-street, aged 33.

CLARKE.—On Jan. 26th, John Clarke, M.R.C.S., L.S.A., of Kenilworth, aged 69.

FISHER.—On Jan. 24th, at Osborne-road, Newcastle-on-Tyne, Alexander Fisher, M.D., Deputy-Inspector-General R.N. (retired).

HEPBURN.—At Coxhoe, county Durham, on Jan. 27th, Sarah Colling, wife of William Alexander Hepburn, M.D., and daughter of the late John Clowes, M.R.C.S., L.S.A.

HOPKINS.—On Jan. 24th, at Berkeley-place, Wimbledon, Nathaniel Hopkins, Surgeon Major, Bombay Army (retired), aged 60.

KNIGHT.—On Jan. 26th, at his residence, Piercefield-road, Freshfield, Liverpool, aged 40 years, Samuel Ratcliffe Knight, B.A., M.B., Ch.B., formerly Scholar of Trinity College, Cambridge, and late Assistant Master at Marlborough College, second son of the late John Knight, Esq., Woodhouse Mills, near Rochdale.

LEPPINGTON.—On Jan. 21st, at Great Grimsby, Hildyard Marshall Leppington, M.R.C.S.E., J.P., aged 85.

LESLIE.—On Dec. 20, 1893, at the island of Dominica, West Indies, of fever, Dr. Rolph Leslie, in his 42nd year.

MURRAY.—On Jan. 25th, at his residence, Elm College, Forres, John Murray, M.D. Aberd.

SAUNDERS.—On Jan. 24th, at Tenterden, Kent, Edwin Dawes Saunders, M.R.C.S., in his 88th year.

SOMERVILLE.—On Jan. 23rd, at Strathview, Lanark, N.B., Thomas Somerville, Deputy Inspector-General of Hospitals, R.N. (retired).

WHITTLE.—On Jan. 28th, at his residence, Parkfield road, Liverpool, Ewing Whittle, M.D. Lond., M.R.I.A., aged 80.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (1 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.).

TUESDAY.—London (2 P.M.), (St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1.30 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.)

WEDNESDAY.—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), Great Northern Central (2.30 P.M.), King's College (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Great Ormond-street (9.30 A.M.).

THURSDAY.—St. Bartholomew's (1.30 P.M.), St Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (2 P.M.), Chelsea (2 P.M.), Soho-sq. (2 P.M.), North West London (2 P.M.)

FRIDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.) Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.)

SATURDAY.—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY.—MEDICAL SOCIETY OF LONDON.—8.30 P.M. Mr. Harrison Cripps: Ovarian Cysts communicating with the Rectum and the Bladder.—Dr. J. G. Garson: A case of Penis splitting.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN (40, Leicester-sq., W.C.).—The President's (Mr. F. Canton) Inaugural Address. A Discussion upon "Root Filling" will be opened by Mr. H. Baldwin. Casual Communications by Messrs. Hern, F. J. Bennett, Storer Bennett, and J. F. Colyer.

TUESDAY.—PATHOLOGICAL SOCIETY OF LONDON.—Dr. Scholefield: Sarcoma of the Supra-renal Body.—Mr. Berry: Dilatation and Rupture of the Sigmoid Flexure without Obstruction.—Mr. Jackson Clarke: Cyst of the Epididymis.—Dr. Pye-Smith: Granular Kidneys from a Young Child.—Mr. Edgar Willett: Transverse Hermaphroditism in an Adult Male.—Mr. Cecil Beadles: A case of Multiple Malignant Growths. Card Specimen:—Dr. H. G. Turney: Thrombosis of the Veins of the Cortex.

WEDNESDAY.—OBSTETRICAL SOCIETY OF LONDON.—8 P.M. Specimens will be shown by Dr. Probyn-Williams, Dr. Boxall, and others. Dr. Robert P. Harris (Philadelphia): A Plea for the Practice of Symphysiotomy, based upon its Record for the past Eight Years (communicated by Dr. Lewers). Annual Meeting; Election of Officers and Council. The President's (Dr. Herman) Annual Address.

THURSDAY.—NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY (Gt. Northern Central Hospital, Holloway-rd., N.).—8.30 P.M. Cases and Specimens will be shown by Drs. Day, Wight, and Walker, and Messrs. Lockwood, Kendall, and others.

FRIDAY.—CLINICAL SOCIETY OF LONDON.—Adjourned Discussion on Mr. John D. Malcolm's case of Nephrectomy for Malignant Tumour in a Patient under Two Years of age. Mr. Arbuthnot Lane: (1) Multiple Epitheliomatous Growths developing in Psoriasis treated with Arsenic more than Thirty Years. (2) Acute General Suppurative Peritonitis Secondary to Appendicitis, Removal of Appendix, Recovery.—Dr. Lauder Brunton and Mr. Watson Cheyne: A case of Intestinal Obstruction due to Constriction of the Bowel after Appendicitis.—Mr. John R. Lunn: Fungating Growth of the Penis lasting Nineteen Months.

LECTURES AND ADDRESSES.

MONDAY.—LONDON POST-GRADUATE COURSE.—Royal London Ophthalmic Hospital, Moorfields, 1 P.M., Mr. A. S Morton: Affections of Eyelids.—London Throat Hospital, Gt. Portland-st., W., 8 P.M., Mr. G.C. Wilkie: Clergyman's Sore Throat.—Bacteriological Laboratory, King's College, 3 P.M., Prof. Crookshank and Dr. Hewlett: Tuberculosis and Leprosy.

ROYAL COLLEGE OF SURGEONS.—5 P.M. Dr. E. H. Starling: The Physiology of Lymph Formation.

THROAT HOSPITAL (Golden-sq., W.).—5 P.M. Mr. F. G. Harvey: Chronic Laryngitis.

ST. JOHN'S HOSPITAL FOR SKIN DISEASES (Leicester-sq., W.C.).—6 P.M. Dr. Morgan Dockrell: The Lichens.

TUESDAY.—LONDON POST-GRADUATE COURSE.—Bethlem Hospital, 2 P.M., Dr. Percy Smith: Puerperal and Lactational Insanity.

WEDNESDAY.—LONDON POST-GRADUATE COURSE.—Hospital for Consumption, Brompton, 4 P.M., Dr. C. Y. Biss: Cases of special interest. Royal London Ophthalmic Hospital, Moorfields, 8 P.M., Mr. A. Q. Silcock: Glaucoma.—Hospital for Skin Diseases, Blackfriars, 1 P.M., Dr. Payne: Impetigo and Contagious Suppuration.

ROYAL COLLEGE OF SURGEONS.—5 P.M. Dr. E. H. Starling: The Physiology of Lymph Formation.

THROAT HOSPITAL (Golden-sq., W.).—5 P.M. Mr. F. G. Harvey: Malignant Disease of Larynx.

WEST LONDON HOSPITAL.—5 P.M. Dr. Ball: Demonstration of Throat Cases. (Post-graduate Course.)

THURSDAY.—LONDON POST-GRADUATE COURSE.—Hospital for Sick Children, Gt. Ormond-st., 3.30 P.M., The Surgical Registrar: Pathological Demonstration of Surgical Specimens.—National Hospital for Paralysed, Bloomsbury, 2 P.M., Dr. Charlton Bastian: Selected Cases.—Central London Sick Asylum, Cleveland-st., W., 5.30 P.M., Sir William MacCormac: Cases in the Wards.

FRIDAY.—LONDON POST-GRADUATE COURSE.—Hospital for Consumption, Brompton, 4 P.M., Dr. C. Y. Biss: Cases of special interest.

ROYAL COLLEGE OF SURGEONS.—5 P.M. Dr. E. H. Starling: The Physiology of Lymph Formation.

SATURDAY.—LONDON POST-GRADUATE COURSE.—Bethlem Hospital: 11 A.M., Dr. Hyslop: Developmental Insanity, Circular Insanity.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, February 1st, 1894.

	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Rainfall.	Remarks at 8.30 A.M.
Jan. 26	29·62	N.W.	42	40	71	50	40	0·25	Cloudy
,, 27	29·78	S.W.	49	47	68	53	40	0·01	Cloudy
,, 28	29·62	S.W.	49	38	74	46	38	0·10	Cloudy
,, 29	30·05	S.W.	38	37	64	47	37	0·01	Hazy
,, 30	29·73	S.W.	44	42	76	50	38	0·13	Cloudy
,, 31	29·28	W.	46	45	46	46	42	0·19	Overcast
Feb. 1	29·86	N.W.	36	35	65	43	34	0·22	Hazy

Notes, Short Comments & Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to the Office.

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Publisher."*

We cannot undertake to return MSS. not used.

PUBLISHER'S NOTICE.

IN order to facilitate the work of reference to the volumes of THE LANCET, we have arranged to publish duplicate copies of the Index to each half-yearly volume in a form in which they may be subsequently filed or bound together. Those of our subscribers who may wish to be supplied with loose copies can obtain the same (without extra charge) on making application to the Publisher of THE LANCET.

INQUEST FEES.

Mr. Ernest Vallance.—The only legal decision was given by the Croydon county court judge in a test case. He ruled that medical officers of workhouse infirmaries were not entitled to fees for making post-mortem examinations and attending inquests on the bodies of persons who had died in those institutions.

R. S.—The results of the inquiry referred to are not as yet forthcoming, but will probably be published at an early date.

Sciatica.—Bournemouth or St. Mary Church, near Torquay.

A DISCLAIMER

To the Editors of THE LANCET.

SIRS,—My attention having been drawn to the evidence of Nurse Beatty in the Harness trial as stating that I had recommended her to go to 52, Oxford-street, I beg to say that I did not recommend her to go there.

I am, Sirs, yours faithfully,

Harley-street, W., Jan. 31st, 1894. HEYWOOD SMITH.

UNIVERSITY OF BERLIN.

THE medical students of this university are to be encouraged in the prosecution of their studies by a special prize to be awarded twice a year to the most diligent worker. This guerdon will be the interest on a capital sum of 100,000 marks which the late Dr. Adolf Düsterhoff has left to the Berlin University for this purpose.

MR. H. M. STANLEY ON PHARMACY.

THE following extract is from a lecture on Africa delivered by Mr. H. M. Stanley last week. He said: "When I think of the dreadful mortality that occurred in Captain Tuckey's expedition in 1816, in the Niger expedition of 1841, at Sierra Leone, and on the Gold Coast, of the sufferings of Burton and Speke, and of my first two expeditions, I am amazed to find that much of the mortality and sickness was due to the crude way in which medicine was supplied to travellers. Formerly we had to take the raw quinine by the teaspoonful, and the calomel, jalap, and rhubarb in heaps on the small end of the spoon. This caused such excessive nausea that the remedy began to be feared more than the fever. In some instances the medicines provoked such convulsive efforts that the eyeballs of the patient were cracked and bloodvessels were burst. The very recollection of them causes me a shudder. Now, however, every traveller conveys his medicine in the form of elegant tabloids coated with sugar. They are powerful and soluble, so that the action is immediate, without the slightest nausea."

Sanitarian.—Our correspondent will find in THE LANCET of Nov. 25th, 1893, an elaborate table of results of experiments with various gas heating stoves. This table affords all the information of which he is desirous.

Subscriber.—Instruction is, we believe, given at the West-end Hospital for Diseases of the Nervous System, Paralysis and Epilepsy.

THE SODEN FUND.

To the Editors of THE LANCET.

SIRS,—I enclose a list of further subscriptions to the above fund.

I am, Sirs, yours faithfully,

3, Northampton-terrace, Jan. 29th, 1894. W. F. BROOK.

Victor Horsley	£1	1	0	John Wood	£0	5	0
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CHEMISTRY AT THE CONJOINT BOARD.

THE subject-matter of *Professor Tilden's* letter is deserving of the fullest consideration at the hands of the authorities. We have no doubt that his remarks would be attended to by the committee of management, to whom in the first instance they should be addressed.

Inquirer.—We have no statistics at hand to give us an indication of the spread of cremation as a means of disposing of the dead; but, roughly, it may be stated that evidence is not wanting that the practice is on the increase.

T. R. P.—If our correspondent will send his card his communication shall receive attention.

SMALL-POX AT HALIFAX.

To the Editors of THE LANCET.

SIRS,—The article in THE LANCET on the above has brought me a lot of correspondence, and one gentleman (writing from Derby) has pointed out that the word "vaccinated," third line from top, page 164, preceding the figures (88), is a misprint and should be "unvaccinated." If any correction is necessary, I will leave it with you.

I am, Sirs, yours truly,

Officer of Health's Department, Town Hall, Halifax. D. AINLEY.
Jan. 30th, 1894.

"ABSENCE OF STERNAL ORIGIN OF PECTORALIS MAJOR."

To the Editors of THE LANCET.

SIRS,—Mr. Roger Williams asks as to the condition of the mammary gland in my patient with absent sternal origin of the pectoralis major. No trace of granular substance can be detected on the affected side, and the nipple is very poorly developed.

I am, Sirs, yours faithfully,

Okehampton, Jan. 30th, 1894. EDWARD H. YOUNG.

TRIONAL.

DR. MATTISON, in the *New York Medical Journal*, states that in his opinion trional is the best hypnotic, and that there is a large consensus of opinion among alienistic experts that of all sedative soporofics trional heads the list. Trional has no analgesic power, and if pain is present sleep will not be produced; therefore, in cases of this kind it is advisable to combine it with codeine, or if the opiate is not needed phenacetin makes an admirable adjunct. Compared with chloral, trional is safer, and contrasted with paraldehyde its effect is more lasting and decided, while its freedom from smell and taste is of no small advantage.

THE SIGNIFICATION OF MEDICAL TITLES.

THE following is an extract from the *Glasgow Evening News*, from which it is evident that our Scottish contemporary does not require the assistance of the surgical operation grimly suggested by Sydney Smith:—

"Three doctors carry on their business in one outlying district of Greater Glasgow, each of them happily self-conscious that he is a better man than his neighbour, with the result that more than the ordinary degree of professional jealousy exists. The secretary of the Free Breakfast Fund called on No. 1 recently and solicited a subscription, which was readily given, the donor adding to his signature the mystic letters M.B., C.M. No. 2 across the street was next waited upon, and he likewise put his name down, with the affix M.B., C.M., L.F.P.S.E. Next No. 3 toed the scratch, and, scrutinising the list, he was amused to find the alphabetical display of his rivals, but, determined to do even better, he gave his name with the letters L.R.C.P. Edinr., L.R.C.S. Edinr., L.F.P.S. Glasgow, L.M., which was very beautiful to behold, and made the subscription-sheet look like a child's No. 1 Copy Book, large capitals. Last of all the subscription-sheet reached a worthy in the district who put down his name, and, not having any degrees to brag of, he added 'A.B.C.D.E.F.G.H.I.J.K.L.M.N.O.P.Q.' When asked what it meant, he replied that it meant nothing, but that he had given a shilling more than any of the doctors, and he considered himself on that account entitled to the most space for letters."

F.R.C.P. (Ontario).—The death of the late Dr. Grally Hewitt took place on Aug. 27th, 1893, and a lengthy notice of his professional career appeared in the columns of THE LANCET on Sept. 9th following.

"WINDOW-CLEANING ACCIDENTS."

To the Editors of THE LANCET.

SIRS,—May I be permitted, in connexion with the article on "Window-cleaning Accidents" (THE LANCET, Dec. 9th, 1893), and the letter on the same subject in THE LANCET of Dec. 23rd, 1893, to say that the idea you express that the windows should "revolve on lateral swivels" was actually patented in 1857, and that early in 1858 the windows of St. James's Hall, London, were fitted with the device, and I presume, if St. James's Hall is still in existence, they may be seen there now. The patentee, Dick, was a native of the north of England—Newcastle-on-Tyne or its vicinity.

I am, Sirs, yours faithfully,

Washington and Lee University, Lexington, Virginia, U.S.A., Jan. 6th, 1894. W. G. BROWN.

"ANTIPYRIN."

To the Editors of THE LANCET.

SIRS,—In reply to the question raised by your correspondent "H. E. G." in THE LANCET of Jan. 6th, as to whether the green body formed by the addition of antipyrin to spirit of nitric ether is harmful or not, I may say, if the question has not already been answered, that the substance seems to be quite harmless, although in at least one case fatal poisoning *appeared* to follow its use. The case, which occurred in France, led to the prosecution of the medical practitioner, but he was acquitted of blame. I have no record of the case by me, but your correspondent will find it in the "Répertoire de Pharmacie" of about one or two years ago.

I am, Sirs, yours faithfully,

Cambridge, Jan. 20th, 1894. J. LLOYD-JONES.

ERRATUM.—In our obituary notice of the late Mr. W. H. Platt he was by a clerical error described as "Colonel" instead of *Surgeon-Lieutenant-Colonel*. He was also an Honorary Associate of the order of St. John of Jerusalem.

COMMUNICATIONS not noticed in our present issue shall receive attention in our next.

During the week marked copies of the following newspapers have been received:—*Wigan Examiner, Southampton Echo, Medical Record (New York), Madras Times, Birmingham Argus, Dundee Advertiser, The Melbourne Leader, Tunbridge Wells Advertiser, Times of India, Pioneer Mail, Liverpool Daily Post, Yorkshire Post, Bristol Mercury, Leeds Mercury, Morning, Daily Telegraph, City Press, Fleetwood Chronicle, Reading Mercury, Local Government Chroniele, Sanitary Record, Hertfordshire Mercury, Lincolnshire Echo, Newmarket Journal, West Middlesex Standard, Weekly Free Press and Aberdeen Herald, Alton Circular, Ilkeston Advertiser, Guy's Hospital Gazette, South London Press, Surrey Advertiser, Buckingham Express, Local Government Journal, Sunday Times, West Middlesex Advertiser, Le Temps (Paris), Hereford Times, Bombay Gazette, Surrey Express, Scarborough Weekly Post, Bristol Times, Market Harborough Advertiser, Essex County Chronicle, Shrewsbury Chronicle, Manchester Examiner, Newcastle Daily Leader, Scotsman, Leicester Daily Post, Citizen, North Wales Chronicle, Australian Medical Journal, Woolwich Gazette, Cheltenham Examiner, Liverpool Courier*, &c., &c.

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Y.—Dr. Ed. H. Young, Okehampton.

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